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Attorneys for Applicant Bayerische Motoren Werke AG

**UNITED STATES DISTRICT COURT
DISTRICT OF ARIZONA**

In Re Ex Parte Application of
Bayerische Motoren Werke AG

Applicants,

for an Order Pursuant to 28 U.S.C. Section
1782 Granting Leave to Obtain Discovery
for Use in Foreign Proceeding.

Case No.

**DECLARATION OF LIONEL M.
LAVENUE IN SUPPORT OF EX
PARTE APPLICATION OF
BAYERISCHE MOTOREN
WERKE AG FOR ORDER
PURSUANT TO 28 U.S.C. §
1782(A) TO OBTAIN DISCOVERY
FOR USE IN FOREIGN
PROCEEDINGS**

I, Lionel M. Lavenue, declare and testify as follows:

1. I am a partner with the law firm Finnegan, Henderson, Farabow, Garrett, &
Dunner, LLP, counsel of record for Applicants Bayerische Motoren Werke
Aktiengesellschaft (“BMW AG”). I am knowledgeable about the facts set forth in this

declaration and could and would testify competently to them if called as a witness, unless otherwise stated.

2. Attached as Exhibit 1 is a true and correct copy of the patent assignment cover sheet of the '082 patent, the U.S. equivalent of the German Patent No. DE 10 2009 060 504 B4 ("DE 504") for assignment by Microchip Technology Inc ("Microchip") to Sonrai Memory Limited ("Sonrai") on February 4, 2020.

3. Attached as Exhibit 2 is a true and correct copy of the patent assignment cover sheet of the '082 patent for the assignment by Sonrai to Arigna Technology Limited ("Arigna") on July 8, 2020.

4. Attached as Exhibit 3 is a true and correct copy of an excerpt of the ITC Complaint of Arigna on May 20, 2021.

5. Attached as Exhibit 4 is a true and correct copy of Judge Payne's order regarding secondment on January 27, 2022 in Case No. 2:21-cv-00054-JRG-RSP.

6. Attached as Exhibit 5 is a true and correct copy of AIPPI (International Association for the Protection of Intellectual Property) Question Q217: The patentability criterion of inventive step/non-obviousness, Germany, Jochen Ehlers, Dr. Thomas Bopp, and Dietmar Haug (April 26, 2011); available at:

<https://www.yumpu.com/en/document/view/27378492/germany-en-aippi> (Last Accessed Mar. 18, 2022).

7. Attached as Exhibit 6 is a true and correct copy of *Elastische Bandage*, BGH, Urt. v. 18. September 1990 - X ZR 29/89, available at:

https://www.prinz.law/urteile/bgh/X_ZR_29-89 (Last Accessed Mar. 18, 2022). On

information and belief, Exhibit 5 is a German Patent Court decision regarding inventive step/non-obviousness referenced footnote 60 of Exhibit 4 above.

8. Attached as Exhibit 7 is a true and correct copy of the Corporate Overview of Microchip, which includes Microchip's business information and was accessed via Google on March 28, 2022.

9. Attached as Exhibit 8 is a true and correct copy of Microchip's Arizona Global Sales and Distribution, which includes Microchip's business information and was accessed via Google on March 28, 2022.

10. Attached as Exhibit 9 is a true and correct copy of the German complaint filed by Arigna Technology Limited ("Arigna") against BMW involving German Patent No. DE 10 2009 060 504 B4 ("DE 504").

11. Attached as Exhibit 10 is a true and correct copy an English-language translation of the German complaint filed by Arigna Technology Limited ("Arigna") against BMW involving German Patent No. DE 10 2009 060 504 B4 ("DE 504").

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct.

Dated: April 1, 2022

By: /s/ Lionel M. Lavenue

Lionel M. Lavenue (*pro hac vice* forthcoming)

**FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.**

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Reston, VA 20190-6023

Attorney for Applicant

BAYERISCHE MOTOREN WERKE AG

Exhibit 1

Exhibit 1

PATENT ASSIGNMENT COVER SHEETElectronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT5946296

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
MICROCHIP TECHNOLOGY INC.	02/03/2020
ATMEL CORPORATION	02/03/2020
MICROSEMI CORPORATION	02/03/2020
RECEIVING PARTY DATA	
Name:	SONRAI MEMORY LIMITED
Street Address:	4-5 BURTON HALL ROAD
Internal Address:	SANDYFORD
City:	DUBLIN
State/Country:	IRELAND
Postal Code:	18
PROPERTY NUMBERS Total: 57	
Property Type	Number
Patent Number:	6650175
Patent Number:	7436232
Patent Number:	6744291
Patent Number:	6809575
Patent Number:	6724241
Patent Number:	6920527
Patent Number:	6900538
Patent Number:	7211893
Patent Number:	6876244
Patent Number:	7159766
Patent Number:	7325733
Patent Number:	7746216
Patent Number:	7218167
Patent Number:	6937071
Patent Number:	7120061
Patent Number:	7450429
Patent Number:	7075464

Property Type	Number
Patent Number:	7330375
Patent Number:	7259612
Patent Number:	7369446
Patent Number:	7751256
Patent Number:	7336110
Patent Number:	7800419
Patent Number:	7671642
Patent Number:	7453725
Patent Number:	7417904
Patent Number:	7423928
Patent Number:	7679987
Patent Number:	7508266
Patent Number:	7876540
Patent Number:	7885047
Application Number:	60989514
Patent Number:	8112699
Patent Number:	8214729
Application Number:	60690701
Patent Number:	7646063
Patent Number:	7985644
Patent Number:	7843232
Patent Number:	8223056
Patent Number:	7007172
Patent Number:	7243372
Patent Number:	7199603
Patent Number:	7336542
Patent Number:	7102950
Patent Number:	8193792
Patent Number:	8415939
Patent Number:	7908516
Patent Number:	8289082
Patent Number:	8947164
Application Number:	61060626
Application Number:	60593035
Application Number:	60908328
Application Number:	61289846
Patent Number:	8760227
Application Number:	61648721

Property Type	Number
Patent Number:	6917150
Patent Number:	6792065

CORRESPONDENCE DATA**Fax Number:**

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

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Address Line 4: WASHINGTON, D.C. 20007

ATTORNEY DOCKET NUMBER:	0035.001STR1
NAME OF SUBMITTER:	MICHAEL MESSINGER
SIGNATURE:	/Michael Messinger/
DATE SIGNED:	02/04/2020

Total Attachments: 23

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Patent Assignment

For good and valuable consideration, the receipt of which is hereby acknowledged, and subject to the encumbrances described, and the other terms and conditions set forth, in the Patent Sale and Assignment Agreement dated as of December 20, 2019 ("Patent Sale Agreement") between Microchip Technology Inc., a Delaware corporation and its Affiliates, including Atmel Corporation and Microsemi Corporation ("Assignor"), and Sonrai Memory Limited, a company incorporated in Ireland ("Assignee"), Assignor hereby sells and assigns to Assignee, all of Assignor's right, title, and interest in and to (i) the U.S. registered patents and patent applications listed in Attachment A ("Listed Patents"), (ii) any patents that may issue on the patent applications included in the Listed Patents, and on any divisionals, continuations, and continuations-in-part that claim benefit of said patent applications, (iii) any reissues and renewals of any Listed Patents, and (iv) any results of oppositions, reexaminations, supplemental examinations, and other review procedures with respect to any Listed Patents (collectively, including the Listed Patents, the "Assigned Patents") for the full term of such Assigned Patents, including any rights to (a) maintain, further prosecute, and renew the Assigned Patents (in each case where possible under applicable law), (b) transfer, and grant licenses and other rights under, the Assigned Patents, and (c) enforce, and bring actions for all past, present and future infringement of, the Assigned Patents.

Notwithstanding, and without limitation of the generality of, the foregoing, (1) Assignee hereby conveys to Assignor, for itself and the other Seller Group Companies, certain non-exclusive rights with respect to the Assigned Patents, (as defined in the Patent Sale Agreement), and (2) the sale and assignment to Assignee or any successor thereto or assignee thereof are subject to the Pre-Existing Rights of third parties, in each case as and to the extent set forth in the Patent Sale Agreement, (as defined in the Patent Sale Agreement). The terms "Seller Group Companies" and "Pre-Existing Rights" have the meanings set forth in the Patent Sale Agreement.

PATENT**REEL: 051799 FRAME: 0959**

FINAL

IN WITNESS WHEREOF, Assignor has caused this Patent Assignment to be duly signed on its behalf.

MICROCHIP TECHNOLOGY INC.

By: Steve Sanghi

Name: Steve Sanghi

Title: CEO

Date: 2/3/20

SONRAI MEMORY LIMITED

By: Ciaran O'Gara

Name: CIARAN O'GARA

Title: DIRECTOR

Date: 30/01/20

ATMEL CORPORATION.

By: Ganesh Moorthy

Name: Ganesh Moorthy

Title: President & COO

Date: 2/3/20

MICROSEMI CORPORATION

By: J. Eric Bjornholt

Name: J. Eric Bjornholt

Title: CEO

Date: 2/3/20

FINAL

Attachment A
Listed Patents

Parent / Publication Number	Application Number	Title	Filed Date	Country Code
<u>US6650175</u>	US10/071605	Device generating a precise reference voltage	2/8/2002	US
<u>GB1231529</u>	GB2290301.7	Device generating a precise reference voltage		
<u>IT1231529</u>	IT2290301.7	Device generating a precise reference voltage		
<u>EP1231529</u>	EP2290301.7	Device generating a precise reference voltage		
<u>FR0101821</u>	FR01/01821	Device generating a precise reference voltage		
<u>NL1231529</u>	NL2290301.7	Device generating a precise reference voltage		
<u>DE60212217.1</u>	DE2290301.7	Device generating a precise reference voltage		
<u>US7436232</u>	US10/666142	Regenerative clock repeater	9/17/2003	US
<u>IT120031217</u>	IT2003M101217	Ripetitore rigenerativo di temporizzazione	6/17/2003	IT
<u>TW200502734</u>	TW2004011661S	Regenerative clock repeater, synchronous semiconductor memory device comprising the same and method thereof	6/10/2004	TW
<u>WO 2005/001891</u>	PCT/US04/15616	Regenerative clock repeater		WO
<u>CN21.200480016980.9</u>	CN200480016980.9	Regenerative clock repeater		CN
<u>US6744291</u>	US10/232636	Power-on reset circuit	8/30/2002	US
<u>GB1636903</u>	GB04752608.2	Regenerative clock repeater		GB

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Patent / Publication Number	Application Number	Title	Filed Date	Country Code
<u>FR1636903</u>	FR04752608.2	Regenerative clock repeater		FR
<u>EP1636903</u>	EP04752608.2	Regenerative clock repeater		EP
<u>DE1636903</u>	DE04752608.2	Regenerative clock repeater		DE
<u>US6809575</u>	US10/407622	Temperature-compensated current reference circuit	4/3/2003	US
-	CA2498780	Temperature-compensated current reference circuit		
<u>IT1020020803</u>	IT2002TO00803	Circuito di riferimento di corrente compensato in temperatura.	9/16/2002	IT
-	PCT/US03/28835	Temperature-compensated current reference circuit		
<u>TW200417133</u>	TW20030125338	Temperature-compensated current reference circuit	9/15/2003	TW
-	CN3821947.6	Temperature-compensated current reference circuit		
-	EP3749655.1	Temperature-compensated current reference circuit		
-	KR05-7004509	Temperature-compensated current reference circuit		
-	HK6105446.3	Temperature-compensated current reference circuit		
<u>JP2005539335</u>	JP20040572005	Current reference circuit is a temperature compensated	9/12/2003	JP
<u>NO20051558</u>	NO20050001558	Temperature-compensated current reference circuit	3/23/2005	NO
<u>US6724241</u>	US10/352733	Variable charge pump circuit with dynamic load	1/27/2003	US
<u>EP1559186</u>	EP20030773076	Variable charge pump circuit with dynamic load	9/30/2003	EP

FINAL

Patent / Publication Number	Application Number	Title	Filed Date	Country Code
GB1559186	GB03773 076.9	Variable charge pump circuit with dynamic load		
FR1559186	FR03773 076.10	Variable charge pump circuit with dynamic load		
DE1559186	DE03773 076.11	Variable charge pump circuit with dynamic load		
ITMI20022268	IT2002MI02268	Circuito pompa di cariche variabile con carico dinamico	10/25/2002	IT
TWI239437	TW 92128687	Variable charge pump circuit with dynamic load		
	JP548342/2004	Variable charge pump circuit with dynamic load		
	CA2501564	Variable charge pump circuit with dynamic load		
	KR1020057006834	Variable charge pump circuit with dynamic load		
	PCT/US03/31058	Variable charge pump circuit with dynamic load		
	CN03824590.6	Variable charge pump circuit with dynamic load		
NO20052473	NO20050002473	Variablet ladningspumpekrets med dynamisk last.	5/23/2005	NO
US6920527	US10/364583	Portable ram drive	2/11/2003	US
US6917105	US10/453157	Integrating chip scale packaging metallization into integrated circuit die structures	6/3/2003	US
US6900538	US10/760434	Integrating chip scale packaging metallization into integrated circuit die structures	1/20/2004	US
US7211893	US10/980536	Integrating chip scale packaging metallization into integrated circuit die structures	11/3/2004	US

PATENT

REEL: 051799 FRAME: 0963

FINAL

Patent / Publication Number	Application Number	Title	Filed Date	Country Code
<u>US6876244</u>	US10/687980	Differential charge pump	10/16/2003	US
<u>US7159766</u>	US10/762767	Peripheral device feature allowing processors to enter a low power state	1/20/2004	US
<u>US7325733</u>	US11/530977	Electrically disconnecting a peripheral device	9/12/2006	US
<u>TW301245</u>	TW20050101565	System and method of processor regulation	1/19/2005	TW
	JP200513353	Peripheral device feature allowing processors to enter a low power state		JP
<u>US7746216</u>	US11/058056	Method and circuit arrangement for holding a control state during inadequate power supply in an rf transponder or remote sensor	2/14/2005	US
<u>CN21200510008328.9</u>	CN200510008328.9	RF Responder or Circuit Arrangement Used in Remote Sensor and Control Method Thereof		
<u>DE102004007106</u>	DE20041007106	Circuit arrangement, in particular for use in rf - transponders or remote sensors	2/13/2004	DE
<u>US7218167</u>	US11/062888	Electric reference voltage generating device of improved accuracy and corresponding electronic integrated circuit	2/22/2005	US
<u>GB1566717</u>	GB5101272.2	Electric reference voltage generating device of improved accuracy and corresponding electronic integrated circuit		
<u>IT1566717</u>	IT5101272.2	Electric reference voltage generating device of improved accuracy and corresponding electronic integrated circuit		

PATENT

REEL: 051799 FRAME: 0964

FINAL

Patent / Publication Number	Application Number	Title	Filed Date	Country Code
<u>FR2866724</u>	FR401753	Electric reference voltage generating device of improved accuracy and corresponding electronic integrated circuit		
<u>FR1566717</u>	FR5101272.2	Electric reference voltage generating device of improved accuracy and corresponding electronic integrated circuit		
<u>NL1566717</u>	NL5101272.2	Electric reference voltage generating device of improved accuracy and corresponding electronic integrated circuit		
<u>DE602005002160.4</u>	DE5101272.2	Electric reference voltage generating device of improved accuracy and corresponding electronic integrated circuit		
<u>ES2293476</u>	ES20050101 272T	Device for generating a reference voltage of improved precision and corresponding integrated electronic circuit.	2/18/2005	ES
<u>US6937071</u>	US10/802894	High frequency differential power amplifier	3/16/2004	US
<u>US7120061</u>	US11/061799	Method and apparatus for a dual power supply to embedded non-volatile memory	2/18/2005	US
<u>TW1373767</u>	TW94110507	Method and apparatus for a dual power supply to embedded non-volatile memory		
	PCT/US2005/009865	Method and apparatus for a dual power supply to embedded non-volatile memory		
	CN200580010125.1	Method and apparatus for a dual power supply to embedded non-volatile memory		

PATENT

REEL: 051799 FRAME: 0965

FINAL

Patent / Publication Number	Application Number	Title	Filed Date	Country Code
<u>EP1747559</u>	EP05729910.9	Method and apparatus for a dual power supply to embedded non-volatile memory		
-	GB05729910.10	Method and apparatus for a dual power supply to embedded non-volatile memory		
-	IT05729910.11	Method and apparatus for a dual power supply to embedded non-volatile memory		
-	DE05729910.12	Method and apparatus for a dual power supply to embedded non-volatile memory		
<u>FR2871281</u>	FR0403434	Method and apparatus for a dual power supply to embedded non-volatile memory		
<u>US7450429</u>	US11/539567	Method and apparatus for a dual power supply to embedded non-volatile memory	10/6/2006	US
<u>US7075464</u>	US11/137463	Circuit for current measurement and current monitoring	5/26/2005	US
-	DE102004026537.2	Circuit for current measurement and current monitoring		
<u>DE102004036352</u>	DE20041036352	Circuit for current measurement and current monitoring and their use for a functional unit	7/27/2004	DE
<u>US7330375</u>	US11/203938	Sense amplifier circuit for parallel sensing of four current levels	8/15/2005	US
<u>TW200703332</u>	TW20060115862	Sense amplifier circuit for parallel sensing of four current levels	5/4/2006	TW

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Patent / Publication Number	Application Number	Title	Filed Date	Country Code
	PCT/US06/013794	Sense amplifier circuit for parallel sensing of four current levels		WO
<u>FR2885726</u>	FR0504737	Sense amplifier circuit for parallel sensing of four current levels		FR
<u>US7259612</u>	US11/168833	Efficient charge pump for a wide range of supply voltages	6/28/2005	US
<u>DE602006015962</u>	DE20066015962T	Efficient charge pump for a variety of supply voltages	6/5/2006	DE
<u>EP1899785</u>	EP20060772215	Efficient charge pump for a wide range of supply voltages	6/5/2006	EP
	HK8112890.8	Efficient charge pump for a wide range of supply voltages		
<u>TW391805</u>	TW95122704	Efficient charge pump for a wide range of supply voltages		TW
<u>CN21200680023594.1</u>	CN200680023594.1	Efficient charge pump for a wide range of supply voltages		CN
	KR1020087001004	Efficient charge pump for a wide range of supply voltages		
	JP2008519317	Efficient charge pump for a wide range of supply voltages		
	PCT/US06/021815	Efficient charge pump for a wide range of supply voltages		WO

PATENT

REEL: 051799 FRAME: 0967

FINAL

Patent / Publication Number	Application Number	Title	Filed Date	Country Code
<u>US7369446</u>	US11/457377	Method and apparatus to prevent high voltage supply degradation for high-voltage latches of a non-volatile memory	7/13/2006	US
<u>US7751256</u>	US11/933805	Method and apparatus to prevent high voltage supply degradation for high-voltage latches of a non-volatile memory	11/1/2007	US
<u>DE2041751</u>	DE602007039627.1	Method and apparatus to prevent high voltage supply degradation for high-voltage latches of a non-volatile memory	6/22/2007	DE
<u>CN101490764</u>	CN2007826653	Method and apparatus to prevent high voltage supply degradation for high-voltage latches of a non-volatile memory	6/22/2007	CN
<u>TW1450272</u>	TW20070123964	High-voltage cmos latch for non-volatile memory and method therefor	7/2/2007	TW
	PCT/US2007/071941	Method and apparatus to prevent high voltage supply degradation for high-voltage latches of a non-volatile memory		WO
<u>EP2041751</u>	EP20070784521	Method and apparatus to prevent high voltage supply degradation for high-voltage latches of a non-volatile memory	6/22/2007	DE
	KR1020097002888	Method and apparatus to prevent high voltage supply degradation for high-voltage latches of a non-volatile memory		

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REEL: 051799 FRAME: 0968

FINAL

Patent / Publication Number	Application Number	Title	Filed Date	Country Code
	HK91080324	Method and apparatus to prevent high voltage supply degradation for high-voltage latches of a non-volatile memory		
JP2009544109	JP20090519574	Method and the device in order to prevent the high tension source deterioration of high tension latch of non-volatile memory	6/22/2007	JP
US7336110	US11/624139	Differential amplitude controlled sawtooth generator	1/17/2007	US
US7800419	US12/014261	Differential amplitude controlled sawtooth generator	1/15/2008	US
CN101584117	CN2008802525	Differential amplitude controlled sawtooth generator	1/16/2008	CN
US7671642	US11/610107	Amplitude controlled sawtooth generator	12/13/2006	US
TW200841596	TW20070147415	Amplitude controlled sawtooth generator	12/12/2007	TW
	PCT/US2007/087304	Amplitude controlled sawtooth generator		
US7453725	US11/539564	Apparatus for eliminating leakage current of a low vt device in a column latch	10/6/2006	US
US7417904	US11/554797	Adaptive gate voltage regulation	10/31/2006	US
TW200832431	TW20070141032	Adaptive gate voltage regulation	10/31/2007	TW
WO2008/055183	PCT/US2007/083062	Adaptive gate voltage regulation	10/30/2007	WO
US7423928	US11/668844	Clock circuitry for ddr-sdram memory controller	1/30/2007	US

PATENT

REEL: 051799 FRAME: 0969

FINAL

Patent / Publication Number	Application Number	Title	Filed Date	Country Code
<u>US7679987</u>	US12/207147	Clock circuitry for ddr-sdram memory controller	9/9/2008	US
	PCT/US08/52405	Clock circuitry for ddr-sdram memory controller		
<u>TW200847184</u>	TW20080103582	Clock circuitry for ddr-sdram memory controller	1/30/2008	TW
	US60823,839	Method for enhancing linearity of a transistor amplifier using switched capacitive loads	8/29/2006	
<u>US7508266</u>	US11/846959	Method for enhancing linearity of a transistor amplifier using switched capacitive loads	8/29/2007	US
<u>US7876540</u>	US12/174802	Adaptive electrostatic discharge (esd) protection of device interface for local interconnect network (lin) bus and the like	7/17/2008	US
<u>US7885047</u>	US12/174903	Adaptive electrostatic discharge (esd) protection of device interface for local interconnect network (lin) bus and the like	7/17/2008	US
<u>TW1455433</u>	TW20080144927	Integrated circuit device having adaptive electrostatic discharge (esd) protection and noise signal rejection	11/20/2008	TW
<u>TW1435436</u>	TW20080144926	Adaptive electrostatic discharge (esd) protection of device interface for local interconnect network (lin) bus and the like	11/20/2008	TW
<u>CN101842954</u>	CN20088113858	Adaptive electrostatic discharge (esd) protection of device interface for local interconnect network (lin) bus and the like	11/21/2008	CN

PATENT

REEL: 051799 FRAME: 0970

FINAL

Patent / Publication Number	Application Number	Title	Filed Date	Country Code
<u>KR101576261</u>	KR20107009462	Adaptive electrostatic discharge(esd) protection of device interface for local interconnect network(lin) bus and the like	11/21/2008	KR
<u>KR101467441</u>	KR20107008914	Adaptive electrostatic discharge(esd) protection of device interface for local interconnect network(lin) bus and the like	11/21/2008	KR
<u>CN101842955</u>	CN20083113868	Adaptive electrostatic discharge (esd) protection of device interface for local interconnect network (lin) bus and the like	11/21/2008	CN
<u>DE2212981</u>	DE20080851188	Adaptive electrostatic discharge (esd) protection of device interface for a local interconnect network (lin) bus and the like	11/21/2008	DE
<u>DE2212982</u>	DE20080852419	Adaptive electrostatic discharge (esd) protection of device interface for a local interconnect network (lin) bus and the like	11/21/2008	DE
<u>EP2212981</u>	EP20080851188	Adaptive electrostatic discharge (esd) protection of device interface for a local interconnect network (lin) bus and the like	11/21/2008	
<u>EP2212982</u>	EP20080852419	Adaptive electrostatic discharge (esd) protection of device interface for a local interconnect network (lin) bus and the like	11/21/2008	
<u>NL2212981</u>	NL20080851188	Adaptive electrostatic discharge (esd) protection of device interface for a local interconnect network (lin) bus and the like		

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REEL: 051799 FRAME: 0971

FINAL

Patent / Publication Number	Application Number	Title	Filed Date	Country Code
<u>NL 2212982</u>	NL20080852419	Adaptive electrostatic discharge (esd) protection of device interface for a local interconnect network (lin) bus and the like		
<u>FR2212982</u>	FR20080852419	Adaptive electrostatic discharge (esd) protection of device interface for a local interconnect network (lin) bus and the like		
<u>FR2212981</u>	FR20080851188	Adaptive electrostatic discharge (esd) protection of device interface for a local interconnect network (lin) bus and the like		
<u>AT540460</u>	AT20080851183T	Adaptiver schutz vor elektrostatischer entladung einer geräte-schnittstelle für einen local interconnect network (lin)-bus und ähnlisches	11/21/2008	AT
<u>AT540461</u>	AT20080852419T	Adaptiver schutz vor elektrostatischer entladung einer geräte-schnittstelle für einen local interconnect network (lin)-bus und dergleichen	11/21/2008	AT
	US60/989514	Adaptive electrostatic discharge (esd) protection of device interface for a local interconnect network (lin) bus and the like		
<u>WO 09/067673</u>	PCT/US08/84365	Adaptive electrostatic discharge (esd) protection of device interface for a local interconnect network (lin) bus and the like		
<u>WO 09/067672</u>	PCT/US08/084362	Adaptive electrostatic discharge (esd) protection of device interface for a local interconnect network (lin) bus and the like		
<u>US8112699</u>	US12/031289	Error detecting/correcting scheme for memories	2/14/2008	US

FINAL

Patent / Publication Number	Application Number	Title	Filed Date	Country Code
<u>US8214729</u>	US13/335725	Error detecting/correcting scheme for memories	12/22/2011	US
<u>TW200947449</u>	TW20090104737	Error detecting/correcting scheme for memories	2/13/2009	TW
<u>CN200910006300.X</u>	CN20091006300X	Error detecting/correcting scheme for memories		CN
	US60/690701	Compact cmos esd layout techniques with either fully segmented salicide ballasting (fssb) in the source and/or drain regions	6/15/2005	
<u>US7646063</u>	US11/451610	Compact cmos esd layout techniques with either fully segmented salicide ballasting (fssb) in the source and/or drain regions	6/12/2006	US
<u>US7985644</u>	US12/606691	METHODS FOR FORMING FULLY SEGMENTED SALICIDE BALLASTING (FSSB) IN THE SOURCE AND/OR DRAIN REGION		
<u>US7843232</u>	US12/395518	Dual mode, single ended to fully differential converter structure	2/27/2009	US
<u>US8223056</u>	US12/436620	Cyclic digital to analog converter	5/6/2009	US
DE112008000205	DE112008000205.3	Differential amplitude controlled sawtooth generator	1/16/2009	DE
TWI470932	TW97101741	Differential amplitude controlled sawtooth generator	1/16/2008	TW
	PCT/US08/51209	Differential amplitude controlled sawtooth generator		

PATENT

REEL: 051799 FRAME: 0973

FINAL

Patent / Publication Number	Application Number	Title	Filed Date	Country Code
US7007172	US09/870460	MODIFIED HARVARD ARCHITECTURE PROCESSOR HAVING DATA MEMORY SPACE MAPPED TO PROGRAM MEMORY SPACE WITH ERRONEOUS EXECUTION PROTECTION	6/1/2001	US
DE1393183	DE02734553.7	MODIFIED HARVARD ARCHITECTURE PROCESSOR HAVING DATA MEMORY SPACE MAPPED TO PROGRAM MEMORY SPACE WITH ERRONEOUS EXECUTION PROTECTION	5/29/2002	DE
FR1393183	FR02734553.7	MODIFIED HARVARD ARCHITECTURE PROCESSOR HAVING DATA MEMORY SPACE MAPPED TO PROGRAM MEMORY SPACE WITH ERRONEOUS EXECUTION PROTECTION	5/29/2002	FR
GB1393183	GB02734553.7	MODIFIED HARVARD ARCHITECTURE PROCESSOR HAVING DATA MEMORY SPACE MAPPED TO PROGRAM MEMORY SPACE WITH ERRONEOUS EXECUTION PROTECTION	5/29/2002	GB
IT1393183	IT02734553.7	MODIFIED HARVARD ARCHITECTURE PROCESSOR HAVING DATA MEMORY SPACE MAPPED TO PROGRAM MEMORY SPACE WITH ERRONEOUS EXECUTION PROTECTION	5/29/2002	IT
NL1393183	NL02734553.7	MODIFIED HARVARD ARCHITECTURE PROCESSOR HAVING DATA MEMORY SPACE MAPPED TO PROGRAM MEMORY SPACE WITH ERRONEOUS EXECUTION PROTECTION	5/29/2002	NL

PATENT

REEL: 051799 FRAME: 0974

FINAL

Patent / Publication Number	Application Number	Title	Filed Date	Country Code
TWNI187545	TW91111712	MODIFIED HARVARD ARCHITECTURE PROCESSOR HAVING DATA MEMORY SPACE MAPPED TO PROGRAM MEMORY SPACE WITH ERRONEOUS EXECUTION PROTECTION	5/31/2002	TW
US7243372	US11/135527	MODIFIED HARVARD ARCHITECTURE PROCESSOR HAVING DATA MEMORY SPACE MAPPED TO PROGRAM MEMORY SPACE WITH ERRONEOUS EXECUTION PROTECTION	5/23/2005	US
US7199603	US10/946432	Increment/Decrement, Chip Select and Selectable Write to Non-Volatile Memory Using a Two Signal Control Protocol for an Integrated Circuit Device	9/21/2004	US
CNZL200580025624.8	CN80025624.8	Increment/Decrement, Chip Select and Selectable Write to Non-Volatile Memory Using a Two Signal Control Protocol for an Integrated Circuit Device	7/25/2005	CN
DE1779389	DE05775227.1	Increment/Decrement, Chip Select and Selectable Write to Non-Volatile Memory Using a Two Signal Control Protocol for an Integrated Circuit Device	7/25/2005	DE
FR1779389	FR05775227.1	Increment/Decrement, Chip Select and Selectable Write to Non-Volatile Memory Using a Two Signal Control Protocol for an Integrated Circuit Device	7/25/2005	FR
KR911013	KR2007-7004472	Increment/Decrement, Chip Select and Selectable Write to Non-Volatile Memory Using a Two Signal Control Protocol for an Integrated Circuit Device	7/25/2005	KR

PATENT

REEL: 051799 FRAME: 0975

FINAL

Patent / Publication Number	Application Number	Title	Filed Date	Country Code
NL1779389	NL05775227.1	Increment/Decrement, Chip Select and Selectable Write to Non-Volatile Memory Using a Two Signal Control Protocol for an Integrated Circuit Device	7/25/2005	NL
TWI340977	TW094125800	Increment/Decrement, Chip Select and Selectable Write to Non-Volatile Memory Using a Two Signal Control Protocol for an Integrated Circuit Device	7/29/2005	TW
US7336542	US11/049334	Nonvolatile Latch	2/1/2005	US
DE1844474	DE06719670.9	Nonvolatile Latch	1/27/2006	DE
US6792065	US10/348782	Method for Counting Beyond Endurance Limitations of Non-Volatile Memories	1/21/2003	US
DE60313807.1	DE03815650.1	Method for Counting Beyond Endurance Limitations of Non-Volatile Memories	12/16/2003	DE
US7102950	US10/910038	Fuse Data Storage System Using Core Memory	8/2/2004	US
DE602005016563.0	DE602005016563.0	Fuse Data Storage System Using Core Memory	7/25/2005	DE
DE102008027392	DE102008027392.9	A circuit and method for the operation of a circuit	6/9/2008	DE
CNZL200910139122.8	CN2009101391228	Schaltung und Verfahren zum Betrieb einer Schaltung	5/7/2009	CN
US8193792	US12/481330	Circuit and Method for Operating a Circuit	6/9/2009	US
US8415939	US13/485426	Circuit and Method for Operating a Circuit	5/31/2012	US
US7908516	US12/017521	Low Power Mode Fault Recovery Method, System and Apparatus	1/22/2008	US

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REEL: 051799 FRAME: 0976

FINAL

Patent / Publication Number	Application Number	Title	Filed Date	Country Code
TW1465895	TW97110245	Low Power Mode Fault Recovery Method, System and Apparatus	3/21/2008	TW
CNZL200880009922.1	CN80009922.1	Low Power Mode Fault Recovery Method, System and Apparatus	3/26/2008	CN
DE2130123	DE8744355.2	Low Power Mode Fault Recovery Method, System and Apparatus	3/26/2008	DE
FR2130123	FR8744355.2	Low Power Mode Fault Recovery Method, System and Apparatus	3/26/2008	FR
NL2130123	NL8744355.2	Low Power Mode Fault Recovery Method, System and Apparatus	3/26/2008	NL
DE102009060504	DE102009060504.5-35	Schaltung und Verfahren zur Einstellung eines Offset-Ausgangsstroms für einen Eingangstromverstärker	12/23/2009	DE
US8289082	US12/977034	Circuit and Method for Adjusting an Offset Output Current for an Input Current Amplifier	12/22/2010	US
CNZL201010606149.6	CN201010606149.6	Circuit and Method for Adjusting an Offset Output Current for an Input Current Amplifier	12/23/2010	CN
US8947164	US13/89221	Integrated Technique for Enhanced Power Amplifier Forward Power Detection	5/14/2013	US
CNZL201380025819.7	CN201380025819.7	Integrated Technique for Enhanced Power Amplifier Forward Power Detection	5/15/2013	CN
DE2850728	DE13728021	Integrated Technique for Enhanced Power Amplifier Forward Power Detection	5/15/2013	DE

PATENT

REEL: 051799 FRAME: 0977

FINAL

Patent / Publication Number	Application Number	Title	Filed Date	Country Code
FR2850728	FR13728021	Integrated Technique for Enhanced Power Amplifier Forward Power Detection	5/15/2013	FR
GB2850728	GB13728021	Integrated Technique for Enhanced Power Amplifier Forward Power Detection	5/15/2013	GB
KR10-1911585	KR10-2014-7035569	Integrated Technique for Enhanced Power Amplifier Forward Power Detection	5/15/2013	KR
TW1-603578	TW102117502	Integrated Technique for Enhanced Power Amplifier Forward Power Detection	5/17/2013	TW
	CA2513734	Method for Counting Beyond Endurance Limitations of Non-Volatile Memories	12/16/2003	CA
CN21200580033533.9	CN200580033533.9	Fuse Data Storage System Using Core Memory	7/25/2005	CN
CN21200680003699.0	CN200680003699.0	Non-Volatile Latch	1/27/2006	CN
CN21200380109892.9	CN200380109892.9	Method for Counting Beyond Endurance Limitations of Non-Volatile Memories	12/16/2003	CN
DE602005016563	DE05776656.0	Fuse Data Storage System Using Core Memory	7/25/2005	DE
EP1774529	EP05776656.0	Fuse Data Storage System Using Core Memory	7/25/2005	EP
	EP09007531.8-1233	Schaltung und Verfahren zum Betrieb einer Schaltung	6/8/2009	EP
EP1844474	EP06719670.9	Nonvolatile Latch	1/27/2006	EP

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REEL: 051799 FRAME: 0978

FINAL

Patent / Publication Number	Application Number	Title	Filed Date	Country Code
EP1393183	EP0273453.7	MODIFIED HARVARD ARCHITECTURE PROCESSOR HAVING DATA MEMORY SPACE MAPPED TO PROGRAM MEMORY SPACE WITH ERRONEOUS EXECUTION PROTECTION	5/29/2002	EP
EP1779389	EP05775227.1	Increment/Decrement, Chip Select and Selectable Write to Non-Volatile Memory Using a Two Signal Control Protocol for an Integrated Circuit Device	7/25/2005	EP
EP1588320	EP3815650.1	Method for Counting Beyond Endurance Limitations of Non-Volatile Memories	12/16/2003	EP
	FR05776656.0	Fuse Data Storage System Using Core Memory	7/25/2005	FR
	FR06719670.9	Nonvolatile Latch	1/27/2006	FR
FR1588320	FR3815650.1	Method for Counting Beyond Endurance Limitations of Non-Volatile Memories	12/16/2003	FR
	GB05776656.0	Fuse Data Storage System Using Core Memory	7/25/2005	GB
GB1588320	GB3815650.1	Method for Counting Beyond Endurance Limitations of Non-Volatile Memories	12/16/2003	GB
	IT05776656.0	Fuse Data Storage System Using Core Memory	7/25/2005	IT
IT1588320	IT3815650.1	Method for Counting Beyond Endurance Limitations of Non-Volatile Memories	12/16/2003	IT
	JP567428/2004	Method for Counting Beyond Endurance Limitations of Non-Volatile Memories	12/16/2003	JP

PATENT

REEL: 051799 FRAME: 0979

FINAL

Patent / Publication Number	Application Number	Title	Filed Date	Country Code
	KR10-2005-7013506	Method for Counting Beyond Endurance Limitations of Non-Volatile Memories	12/16/2003	KR
NL1588320	NL3815650.1	Method for Counting Beyond Endurance Limitations of Non-Volatile Memories	12/16/2003	NL
	NO20053908	Method for Counting Beyond Endurance Limitations of Non-Volatile Memories	12/16/2003	NO
WO2006/020357	PCT/US05/026205	Fuse Data Storage System Using Core Memory	7/25/2005	WO
	PCT/US2006/002914	Nonvolatile Latch	1/27/2006	WO
WO02/099647	PCT/US02/16705	MODIFIED HARVARD ARCHITECTURE PROCESSOR HAVING DATA MEMORY SPACE MAPPED TO PROGRAM MEMORY SPACE WITH ERRONEOUS EXECUTION PROTECTION	5/29/2002	WO
WO06/014860	PCT/US05/026259	Increment/Decrement, Chip Select and Selectable Write to Non-Volatile Memory Using a Two Signal Control Protocol for an Integrated Circuit Device	7/25/2005	WO
WO2004/068273	PCT/US03/40000	Method for Counting Beyond Endurance Limitations of Non-Volatile Memories	12/16/2003	WO
TWI371032	TW94126047	Fuse Data Storage System Using Core Memory	8/1/2005	TW
TWI319883	TW95103411	Nonvolatile Latch	1/27/2006	TW
	TW93100123	Method for Counting Beyond Endurance Limitations of Non-Volatile Memories	1/5/2004	TW

PATENT

REEL: 051799 FRAME: 0980

FINAL

Patent / Publication Number	Application Number	Title	Filed Date	Country Code
	US61/060626	Schaltung und Verfahren zum Betrieb einer Schaltung	6/11/2008	US
	US60/593035	Selectable Write To Non-Volatile Memory Using An Increment/Decrement Serial Protocol	7/30/2004	US
EP2130123	EP8744355.2	Low Power Mode Fault Recovery Method, System and Apparatus	3/26/2008	EP
EP2850728	EP13728021	Integrated Technique for Enhanced Power Amplifier Forward Power Detection	5/15/2013	EP
	PCT/US08/58196	Low Power Mode Fault Recovery Method, System and Apparatus	3/26/2008	WO
	PCT/US2013/041202	Integrated Technique for Enhanced Power Amplifier Forward Power Detection	5/15/2013	WO
	US60/908328	Low Power Mode Fault Recovery Method, System and Apparatus	3/27/2007	US
	US61/289846	Eingangsstromverstärker mit Offset Kalibrierung für Touchscreen Applikation	12/23/2009	US
US8760227	US13/652166	Circuit and Method for Adjusting an Offset Output Current for an Input Current Amplifier	10/15/2012	US
	US61/64721	Integrated Technique for Enhanced Power Amplifier Forward Power Detection	5/18/2012	US

PATENT

REEL: 051799 FRAME: 0981

RECORDED: 02/04/2020

Exhibit 2

Exhibit 2

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT6189605

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	NUNC PRO TUNC ASSIGNMENT
EFFECTIVE DATE:	02/25/2020

CONVEYING PARTY DATA

Name	Execution Date
SONRAI MEMORY LIMITED	03/07/2020

RECEIVING PARTY DATA

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State/Country:	IRELAND
Postal Code:	18

PROPERTY NUMBERS Total: 9

Property Type	Number
Patent Number:	7746216
Patent Number:	7075464
Patent Number:	8947164
Patent Number:	8760227
Patent Number:	8289082
Patent Number:	7908516
Patent Number:	7646063
Patent Number:	7885047
Patent Number:	7876540

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PATENT

506142874

REEL: 053147 FRAME: 0853

ATTORNEY DOCKET NUMBER:	0035.002DUE1
NAME OF SUBMITTER:	MICHAEL MESSINGER
SIGNATURE:	/Michael Messinger/
DATE SIGNED:	07/08/2020
Total Attachments: 2 source=sonrai-arignaFedEx Scan 2020-07-06_15-40-06#page1.tif source=sonrai-arignaFedEx Scan 2020-07-06_15-40-06#page2.tif	

Atty Docket No. 0035.00000000

Patent Assignment

For good and valuable consideration, the receipt of which is hereby acknowledged, and subject to the encumbrances described, and the other terms and conditions set forth, in the Patent Assignment Agreement dated February 25, 2020 between Sonrai Memory Limited, a company organized under the laws of Ireland and having a principal place of business at Suite 23, The Hyde Building, The Park, Carrickmines, Dublin 18, Ireland ("Assignor"), and Arigna Technology Limited, a company organized under the laws of Ireland and having a principal place of business at Suite 23, The Hyde Building, The Park, Carrickmines, Dublin 18, Ireland ("Assignee"), Assignor hereby sells and assigns to Assignee, *nunc pro tunc*, effective as of February 25, 2020, all of Assignor's right, title, and interest in and to (i) the U.S. and international registered patents and patent applications listed in Schedule I(a) ("Listed Patents"), (ii) any patents that may issue on the patent applications included in the Listed Patents, (iii) any divisional, continuation, or further applications arising from the Listed Patents; (iv) patents and/or patent applications to which the Listed Patents claim priority, or which claim priority to the Listed Patents; (v) any reissues and renewals of any Listed Patents, and (vi) any results of oppositions, reexaminations, supplemental examinations, and other review procedures with respect to any Listed Patents (collectively, including the Listed Patents, the "Assigned Patents") for the full term of such Assigned Patents, including any rights to (a) maintain, further prosecute, and renew the Assigned Patents (in each case where possible under applicable law), (b) transfer, and grant licenses and other rights under, the Assigned Patents, and (c) enforce, and bring actions for all past, present and future infringement of, the Assigned Patents.

IN WITNESS WHEREOF, Assignor and Assignee have caused this Patent Assignment to be duly signed on their behalf.

ARIGNA TECHNOLOGY LIMITED

(ASSIGNEE)

By: Name: CARAN O'GARATitle: DIRECTORDate: 30/06/20**SONRAI MEMORY LIMITED**

(ASSIGNOR)

By: Name: Gerald PadianTitle: DirectorDate: 03/07/20

Atty Docket No. 0035.0000000

Schedule I(a)
Listed Sonrai Patents

US7746216	EP2130123
DE102004007106	EP2130123(FR)
US7075464	EP2130123(NL)
DE102004036352	CN101647005
US8947164	TWI465895
EP2850728	US7876540
CN104303416	US7885047
WO2013173489	TWI455433
KR10191185	TWI435436
TWI603578	CN101842954
DE602013052258	KR101576261
EP2850728(FR)	KR101467441
EP2850728(GB)	CN101842955
US8760227	EP2212981
DE102009060504	DE602008012537
CN102122188	EP2212981
US8289082	EP2212982
US7908516	60 2008 012 539 (EP221982)
DE602008003317	EP2212982
US7646063	AT540460
	AT540461

Exhibit 3

Exhibit 3

**UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.**

In the Matter of

CERTAIN POWER INVERTERS AND
CONVERTERS, VEHICLES CONTAINING
THE SAME, AND COMPONENTS
THEREOF

Investigation No. _____

**VERIFIED COMPLAINT OF ARIGNA TECHNOLOGY LIMITED
UNDER SECTION 337 OF THE TARIFF ACT OF 1930, AS AMENDED**

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EXHIBIT LIST

Exhibit No.	Description
1	Certified Copy of U.S. Patent No. 8,247,867
2	Certified Copy of U.S. Patent No. 8,289,082
3	Certified Assignment Records For U.S. Patent No. 8,247,867
4	Certified Assignment Records For U.S. Patent No. 8,289,082
5	List of Foreign Counterparts to the Asserted Patents
6.1C	Confidential Domestic Industry Statement of Rudy Jaramillo
6.2C	Confidential Domestic Industry Statement of Stephanus Duvenhage
7C	Confidential List of Licensees of the Asserted Patents
8C	Microchip License Agreement
9	Corporate Overview of Microchip
10	Article Discussing Importation of Volkswagen, Audi, Bentley, and Lamborghini Vehicles
11	Audi SQ7 Sales Listing in Plano, Texas
12	Audi SQ7 Place of Manufacture
13	Audi SQ7 VIN Decoder Results
14	Import Record for Audi SQ7
15	Audi SQ7 Self Study Programme 651
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18	BMW i3 Sales Listing in Dallas, Texas
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23	BMW 330e Sales Listing in Dallas, Texas
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25	Article Discussing Sale of BMW 330e Through U.S. Dealers
26	Import Records for BMW 3 Series
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28	BMW 540i Sales Listing in Tyler, Texas
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31	BMW Model Year 2021 Update Information
32	Dual Voltage Power Supply System with 48 Volt
33	German Carmakers Agree on 48V On-Board Supply, Charging Plug
34	48V HEV System Introduction and Infineon Approach for 48V
35	Internal Photograph of Hella 48V Converter
36	Bentley Bentayga Sales Listing in Austin, Texas

Exhibit No.	Description
37	Bentley Bentayga VIN Decoder
38	Import Record for Bentley Bentayga
39	Bentley Bentayga OEM 48V Voltage Transformer
40	External Photograph of Bentley Bentayga Bosch 48V Converter
41	Chevrolet Bolt Sales Listing in Dallas, Texas
42	Import Records for Chevrolet Bolt Inverter
43	Article Discussing Chevrolet Bolt Production
44	Article Regarding LG Production of Chevrolet Bolt Components
45	Lamborghini Urus Sales Listing in Long Island, New York
46	Lamborghini Urus VIN Decoder Results
47	Import Record for Lamborghini Urus
48	Lamborghini Urus OEM 48V Voltage Transformer
49	External Photograph of Lamborghini Urus Bosch 48V Converter
50	Mercedes-Benz S-Class Sales Listing in Tyler, Texas
51	Mercedes-Benz S-Class VIN Decoder Results
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53	Under the Microscope: 48 Volt System: More Power, Performance, Flexibility, Comfort and Efficiency
54	48 V by Mercedes-Benz
55	External Photograph of Mercedes-Benz S-Class Hella 48V Converter
56	Porsche Panamera Sales Listing in Brentwood, Tennessee
57	Porsche Panamera VIN Decoder Results
58	Import Record for Porsche Panamera
59	Porsche Panamera with PDCC Sport Sales Listing
60	Porsche USA Press Release re PDCC Sport
61	Screenshot of Porsche Panamera Bosch 48V Converter
62	Porsche Panamera Article re Audi 48V System
63	Volkswagen ID.4 Sales Listing in Tyler, Texas
64	Volkswagen ID.4 VIN Decoder Results
65	Article Discussing ID.4 Production in Germany and Importation into the U.S.
66	Volkswagen ID.4 Reservation Page
67	Import Records for Volkswagen ID.4
68	Infringement Claim Chart for U.S. Patent No. 8,289,082 to Audi (Audi SQ7)
69	Infringement Claim Chart for U.S. Patent No. 8,247,867 to BMW (BMW i3)
70	Infringement Claim Chart for U.S. Patent No. 8,247,867 to BMW (BMW 330e)
71	Infringement Claim Chart for U.S. Patent No. 8,289,082 to BMW (BMW 540i)
72	Infringement Claim Chart for U.S. Patent No. 8,289,082 to Bentley (Bentley Bentayga)
73	Infringement Claim Chart for U.S. Patent No. 8,247,867 to General Motors (Chevrolet Bolt)

Exhibit No.	Description
74	Infringement Claim Chart for U.S. Patent No. 8,289,082 to Lamborghini (Lamborghini Urus)
75	Infringement Claim Chart for U.S. Patent No. 8,289,082 to Mercedes-Benz (Mercedes-Benz S-Class)
76	Infringement Claim Chart for U.S. Patent No. 8,289,082 to Porsche (Porsche Panamera)
77	Infringement Claim Chart for U.S. Patent No. 8,247,867 to Volkswagen (Volkswagen ID.4)
78C	Confidential Domestic Industry Claim Chart for U.S. Patent No. 8,247,867 (Microchip Trench FET)
79C	Confidential Domestic Industry Claim Chart for U.S. Patent No. 8,289,082 (Microchip ATMXT540S)

APPENDICES

Appendix	Description
A1	Certified copy of the prosecution history of U.S. Patent No. 8,247,867
A2	References cited in the prosecution history of U.S. Patent No. 8,247,867
B1	Certified copy of the prosecution history of U.S. Patent No. 8,289,082
B2	References cited in the prosecution history of U.S. Patent No. 8,289,082

I. INTRODUCTION

1. Arigna Technology Limited (“Arigna” or “Complainant”) requests that the United States International Trade Commission institute an investigation pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337 (“Section 337”), to remedy the unlawful importation, sale for importation, and/or sale after importation by the proposed Respondents of certain power inverters and converters, vehicles containing the same, and components thereof (the “Accused Products”). The Accused Products infringe, either literally or under the doctrine of equivalents, certain claims of U.S. Patent No. 8,247,867 (the “’867 Patent,” attached hereto as Exhibit 1) and U.S. Patent No. 8,289,082 (the “’082 Patent,” attached hereto as Exhibit 2) (collectively, the “Asserted Patents”).

2. The Accused Products infringe at least the following claims of one or more Asserted Patents in violation of Section 337(a)(1)(B)(i) and 35 U.S.C. § 271(a)-(c), either literally or under the doctrine of equivalents:

Asserted Patent	Asserted Independent Claims	Asserted Dependent Claims
U.S. Patent No. 8,247,867	1, 8	2, 9
U.S. Patent No. 8,289,082	1, 17	2, 3, 4, 5, 6, 13, 18, 19, 20, 21, 22, 29

3. The proposed Respondents are Audi AG and its wholly owned subsidiary Audi of America, LLC; Bayerische Motoren Werke AG and its wholly owned U.S. subsidiary BMW of North America, LLC; Bentley Motors Limited and Bentley Motors, Inc.; General Motors Company and its wholly owned subsidiary General Motors LLC; Automobili Lamborghini S.p.A. and Automobili Lamborghini America, LLC; Daimler AG and its wholly owned U.S. subsidiary Mercedes-Benz USA, LLC; Porsche AG and its U.S. subsidiary Porsche Cars North America, Inc.; and Volkswagen AG and its wholly owned U.S. subsidiary Volkswagen Group of America, Inc. (collectively, the “proposed Respondents”).

4. On information and belief, and as set forth in this Complaint, each of the proposed Respondents imports into the United States, sells for importation into the United States, sells in the United States after importation, and/or instructs other proposed Respondents regarding the use, manufacture, or importation of one or more Accused Products that infringe one or more of the Asserted Patents, either literally or under the doctrine of equivalents.

5. A domestic industry exists under 19 U.S.C. § 1337(a)(2) and (3) as the result of activities and investments in the United States related to products that practice the Asserted Patents. These activities include the current and continuing significant and substantial domestic investments in plants, equipment, labor, and capital of licensee Microchip Technology Incorporated (“Microchip”), a U.S. company licensed to practice the Asserted Patents.

6. Complainant seeks, as relief for the unfair acts of proposed Respondents, the following relief from the Commission: (i) an investigation into proposed Respondents’ violations; (ii) a public hearing; (iii) a limited exclusion order barring from entry into the United States the Accused Products manufactured by or on behalf of, or imported by or on behalf of, the proposed Respondents that infringe one or more of the Asserted Patents; (iv) a cease and desist order prohibiting the sale for importation, importation, sale after importation, distribution, offering for sale, promoting, marketing, advertising, testing, demonstrating, warehousing inventory for distribution, solicitation of sales, programming, repairing, maintaining, using, transferring, and other commercial activity relating to the Accused Products; (v) the imposition of a bond on importation and sales of Accused Products during the Presidential Review Period pursuant to 19 U.S.C. § 1337(j); and (vi) such other relief as the Commission deems appropriate.

II. COMPLAINANT

7. Complainant Arigna Technology Limited is an Irish company conducting business at The Hyde Building, Carrickmines, Suite 23, Dublin 18, Ireland. Arigna is the sole owner by

assignment of all right, title, and interest in each Asserted Patent. *See* Exhibits **3-4**.

8. One of Arigna's domestic licensees is Microchip, a U.S. company incorporated in Delaware and headquartered at 2355 W. Chandler Boulevard, Chandler, Arizona 85224. Microchip is a predecessor-in-interest of the '082 Patent. Microchip has a non-exclusive license to practice each of the Asserted Patents. A corporate overview of Microchip is attached as Exhibit **9**. The confidential licensing agreement between Arigna and Microchip is attached as Exhibit **8C**. 19 C.F.R. § 210.12(a)(9)(iv).

9. Microchip was founded and is still headquartered in the United States, and its strategic focus is on "secure embedded control solutions." Exhibit **9**. Microchip provides connected and secure embedded control solutions to U.S. customers in the automotive, industrial, aerospace, defense, and computing markets. In the automotive industry specifically, Microchip supplies an array of automotive-grade products, including analog, connectivity, memory, microcontroller, security, timing, and touch systems. As discussed in further detail herein, Microchip has made and continues to make substantial investments in labor, equipment, and capital related to devices that practice and are protected by the Asserted Patents.

10. Recently, due to the widespread importation of vehicles and components that infringe the Asserted Patents, Microchip's market standing has eroded and its domestic industry related to the Asserted Patents has been injured. Complainant Arigna, as owner of a portfolio of patents covering power semiconductors for applications in a wide variety of automobiles and consumer electronics products, including modern vehicles, and in partnership with Microchip, has undertaken the task of counteracting these unfair and unlawful acts. Specifically, Arigna and Microchip have partnered to advance applications of the patented semiconductor and current amplifier technologies, and Microchip continues to substantially invest in the patented

technologies through domestic labor, capital, and equipment at its facilities in Chandler, Arizona and Colorado Springs, Colorado, among others. *See* Exhibits **6.1C**, **6.2C**.

11. The partnership between Arigna and Microchip is intended to protect and increase American-made goods and American jobs, including jobs at Microchip’s Arizona and Colorado facilities. Although Microchip is a third party, its interest in this case is sincere. Under the terms of Microchip’s confidential license agreement with Arigna, Microchip has agreed to provide Arigna any requested technical or economic information pertaining to Microchip’s products in a reasonable and timely manner for at least two years from the agreement’s effective date of June 26, 2020. *See* Exhibit **8C** at ¶ 2(b). With Microchip’s assistance, Arigna strives to protect the domestic industry interests of Microchip and others by enforcing the Asserted Patents.

III. PROPOSED RESPONDENTS

A. Audi Respondents

12. Volkswagen AG is a German corporation; is headquartered at Berliner Ring 2, 38440 Wolfsburg, Germany; and has as its wholly owned subsidiary Audi AG. Audi AG is a German corporation; is headquartered at Auto-Union-Straße 1, 85057 Ingolstadt, Germany; and has as its wholly owned subsidiary Audi of America, LLC, a Delaware limited liability corporation headquartered at 2200 Ferdinand Porsche Drive, Herndon, Virginia 20171 (collectively, “Audi Respondents” or “Audi”).

13. Upon information and belief, Audi AG designs, develops, manufactures, and imports into the United States, sells for importation into the United States, and/or sells in the United States after importation Accused Products that infringe the ’082 Patent. *See* Exhibits **10-15**.

14. Upon information and belief, Audi of America, LLC designs, develops, manufactures, and imports into the United States, sells for importation into the United States, and/or sells in the United States after importation Accused Products that infringe the ’082 Patent.

- (d) issue permanent orders, pursuant to 19 U.S.C. § 1337(f), directing proposed Respondents to cease and desist from importing, selling, selling for importation, offering for sale, using, demonstrating, promoting, marketing, and/or advertising in the United States proposed Respondents' power inverters and converters, vehicles containing the same, and components thereof that infringe, literally and/or under the doctrine of equivalents, one or more claims of the Asserted Patents, including, without limitation, the specific Accused Products identified in this Complaint and the exhibits hereto;
- (e) impose a bond on importation and sales of infringing products during the 60-day Presidential review period pursuant to 19 U.S.C. § 1337(j); and
- (f) grant all such other and further relief as it deems appropriate under the law, based upon the facts complained of herein and as determined by the investigation.

Dated: May 21, 2021

Respectfully submitted,

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Counsel for Arigna Technology Limited

**UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.**

In the Matter of

**CERTAIN POWER INVERTERS AND
CONVERTERS, VEHICLES CONTAINING
THE SAME, AND COMPONENTS
THEREOF**

Investigation No. _____

I, Gerald Padian, declare, in accordance with 19 C.F.R. § 210.12(a)(1), as follows:

1. I am a Director of Arigna Technology Limited and I am duly authorized to sign this Complaint;
2. I have read the Complaint and am aware of its contents;
3. The Complaint is not being presented for any improper purpose, such as to harass or to cause unnecessary delay or needless increase in the cost of the investigation or related proceeding;
4. To the best of my knowledge, information, and belief founded upon reasonable inquiry, claims, defenses, and other legal contentions therein are warranted by existing law or by a non-frivolous argument for the extension, modification, or reversal of existing law or the establishment of new law;
5. The allegations and other factual contentions have evidentiary support or are likely to have evidentiary support after a reasonable opportunity for further investigation or discovery.

I declare under the penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on May 20, 2021



Gerald Padian
Arigna Technology Limited

Exhibit 4

Exhibit 4

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

ARIGNA TECHNOLOGY LIMITED,

Plaintiff,

v.

VOLKSWAGEN AG, ET AL.

Defendants.

§
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§
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Case No. 2:21-cv-00054-JRG-RSP

ORDER

Currently before the Court are two motions filed by Defendant BMW: (1) BMW Defendants' Motion to Compel 30(b)(1) Depositions of Robert Beirne and Adam Mullooly (Dkt. No. 432), and (2) BMW Defendants' Motion to Expedite Briefing (Dkt. No. 435).

Defendants seek to compel Plaintiff to produce Beirne and Mullooly for depositions upon notice, without the need to serve subpoenas on the witnesses. Defendants characterize the witnesses as employees of Atlantic IP Services Ltd. who have been "formally seconded" to Plaintiff in Ireland. Defendants argue that Beirne and Mullooly qualify as managing agents of Plaintiff for purposes of Rule 45. Nothing in this record provides a basis to conclude that non-employees of Plaintiff could be properly characterized as managing agents of Plaintiff under Rule 45. However, if Defendants can show that the witnesses legally qualify as employees of Plaintiff by virtue of the secondment agreement (which is not in the record), or that Plaintiff seeks to preserve the option to use Beirne or Mullooly as witnesses, then the Court is inclined to order Plaintiff to make them available for deposition upon reasonable notice regardless of whether they qualify as managing agents.

If Defendants feel they can demonstrate that either of these conditions is met, then they are directed to file a supplemental brief with relevant exhibits by February 1, 2022. If not, both

motions will be denied. If such a supplemental brief is filed, Plaintiff is ordered to file any opposition by February 7, 2022.

SIGNED this 3rd day of January, 2012.

SIGNED this 27th day of January, 2022.



ROY S. PAYNE
UNITED STATES MAGISTRATE JUDGE

Exhibit 5

Exhibit 5



Question Q217

National Group: Germany

Title: **The patentability criterion of inventive step / non-obviousness**

Contributors: Jochen Ehlers, Dr. Thomas Bopp, Dietmar Haug

Reporter within Working Committee: Jochen Ehlers

Date: **26 April 2011**

Questions

I. Analysis of current law and case law

The Groups are invited to answer the following questions under their national laws:

Level of inventive step / non-obviousness

1. What is the standard for inventive step / non-obviousness in your jurisdiction? How is it defined?

Pursuant to Art. 56, sentence 1, EPC, an invention shall be considered as involving an inventive step if, having regard to the state of the art, it is not obvious to a person skilled in the art [in the German version: gilt eine Erfindung als auf einer erfinderischen Tätigkeit beruhend, wenn sie sich für den Fachmann nicht in naheliegender Weise aus dem Stand der Technik ergibt].¹ The wording of Sec. 4, sentence 1, German Patent Act is identical. The English and French versions of the EPC use the terms “not obvious”² and “ne découle pas d’une manière évidente”³, however, a meaning deviating from the German version is not apparent from these semantic differences. The legal definition of inventive step therefore refers to the vague term of “obviousness” for the likewise undefined “person skilled in the art”. In German literature and case law, this fictitious person skilled in the art is also often referred to as the “average person skilled in the art” in order to suggest that this person skilled in the art in any case should not have above-average knowledge and skill.

¹ See in this connection the report of the regional group regarding question Q213 - The Person of Average Skill in Connection with the Requirement of Inventive Step in Patent Law

² “An invention shall be considered as involving an inventive step if, having regard to the state of the art, it is not obvious to a person skilled in the art.”

³ “Une invention est considérée comme impliquant une activité inventive si, pour un homme du métier, elle ne découle pas d’une manière évidente de l’état de la technique.”

As the Federal Court of Justice (FCJ) emphasized in particular in its recent case law⁴ the question of obviousness for the person skilled in the art and thus the question of inventive step is a question of law. "The assessment of whether the solution according to the invention was obvious to the person skilled in the art according to his established knowledge and skill is ... not the task of the expert, but is incumbent on the Court as an act of evaluatory recognition ... The Court has to study all of the factual circumstances which are suited - directly or indirectly - to reveal something regarding the requirements for finding the solution according to the invention."

2. Has the standard changed in the last 20 years? Has the standard evolved with the technical / industrial evolution of your jurisdiction?

In general, fundamental changes with regard to the approach towards the examination of inventive step have not been apparent in the past 20 years.⁵

In Germany, focus was placed on whether the person skilled in the art could find the claimed subject matter using his knowledge and skill on the basis of the prior art when considering this as a whole⁶. In the more recent case law, the FCJ has taken a more formalized approach in which focus is placed on whether the person skilled in the art had a motivation to further develop the prior art in the direction of the claimed subject matter⁷. "[There must as a rule be, except] in those cases in which the skilled person sees immediately what is to be done, additional impulses, stimuli, suggestions or other motives going beyond the discernability of the technical problem to prompt the skilled person to look for the solution to the technical problem by way of the invention."⁸

There have been important changes for computer-implemented inventions: While the Federal Court of Justice has recently placed lower requirements on the technicality of a computer-implemented invention with technical and non-technical features⁹, the criteria regarding the examination for inventive step have been tightened: While the entire subject matter of the invention (i.e. technical and non-technical features including a possible calculation rule) was considered until this time¹⁰, now¹¹ only those instructions are to be taken as a basis when examining inventive step which determine or at least influence the solution of the technical problem with technical means.

3. Does your patent-granting authority publish examination guidelines on inventive step / non-obviousness? If yes, how useful and effective are the guidelines?

The German Patent and Trademark Office publishes Guidelines for the Examination of Patent Applications (Prüfungsrichtlinien).¹² Section 3.3.3.2.4 thereof describes the procedure for carrying out an examination for inventive step. The examiners are obliged to examine patent applications in

⁴ FCJ - X ZR 162/00 - Diabehältnis, FCJ - X ZR 213/01 - Vorausbezahlte Telefongespräche, X

⁵ Changes with respect to this have become apparent according to more recent case law for the assessment of inventive step of a utility model. In this regard the principles developed in patent law can be used. (FCJ - X ZB 27/05 (Federal Patent Court) - Demonstrationsschrank)

⁶ Asendorf/Schmidt in Benkard, Patent Act and Utility Model Act, 10th edition, Munich (C. H. Beck) 2006, Sec. 4, marginal no. 18

⁷ FCJ - Xa ZR 92/05 - Betrieb einer Sicherheitseinrichtung, FCJ - X ZR 65/05 - Einteilige Öse, X ZR 27/04 - Stahlblech

⁸ FCJ - Xa ZR 92/05 - Betrieb einer Sicherheitseinrichtung

⁹ FCJ, decision of 22 April 2010 - Xa ZB 20/08 (Federal Patent Court) - Dynamische Dokumentengenerierung

¹⁰ FCJ, Judgment of 4 February 1992 - X ZR 43/91 (Federal Patent Court) - "Tauchcomputer"

¹¹ FCJ, Judgment of 26 October 2010 - X ZR 47/07 (Federal Patent Court) - "Wiedergabe topografischer Informationen"

¹² BIPMZ 2004, 69; <http://www.dpma.de/docs/service/formulare/patent/p2796.pdf>

accordance with the Guidelines. However, amendments and the development of case law as well as the particularities of individual cases are to be taken into consideration.

The European Patent Office (EPO) publishes Guidelines for Examination in the European Patent Office.¹³ The examination for inventive step is described in section C-IV.11 thereof. The guidelines are primarily intended for the examiners of the EPO, however, the EPO deliberately wishes that these should also be of use to the parties to the proceedings and the authorized persons. Examiners can, however, deviate from the guidelines in exceptional cases. However, the parties involved can as a rule assume that the EPO will adhere to the Guidelines until these - or the legal provisions forming the basis thereof - will be amended.

4. Does the standard for inventive step / non-obviousness differ during examination versus during litigation or invalidity proceedings?

According to the wording of Sec. 21(1) no. 1 German Patent Act, a German patent will be revoked if it transpires that the subject matter of the patent is not patentable according to Sections 1 through 5 German Patent Act. Thus, it is not possible to apply a different standard to assessing inventive step in granting and opposition proceedings. It is apparent from the reference to Sec. 21(1) German Patent Act made in Sec. 22(1) German Patent Act that the principles regarding the assessment of inventive step in the granting proceedings apply likewise in the nullity proceedings.¹⁴ However, with granted patents it must be considered that the burden of substantiating obviousness is in principle on the opponent or nullity plaintiff, while in the granting proceedings (in any case when the Patent Office raises objections) it is the applicant who must show that the claimed subject matter was not obvious to a person skilled in the art.

Pursuant to Art. 100(a) EPC, an opposition against a European patent can be based on the fact that the subject matter of the European patent is not patentable pursuant to Arts. 52 to 57 EPC. Thus, when assessing inventive step the same principles apply in the opposition proceedings before the EPO as in the granting proceedings.

However, in nullity proceedings a court is not bound by decisions in previous (German or European) granting or opposition proceedings. In particular the German part of a European patent can be declared null and void based solely on a prior art which was already the subject matter of opposition proceedings before the European Patent Office.¹⁵

In patent infringement proceedings, the defendant cannot defend itself by raising the objection that the patent in suit lacks validity. If an opposition or nullity action is pending against the patent in suit, the court can order, pursuant to Sec. 148 German Code of Civil Procedure, that the proceedings be stayed until the other lawsuit has been resolved. However, the requirement for a stay is a predominant likelihood that the attack will be successful.¹⁶ To assess this, patentability pursuant to Secs. 1 to 5 German Patent Act or Arts. 52 to 57 EPC will in the end also have to be considered. To counteract a possible stay, the plaintiff can assert the patent in suit in a restricted scope in the infringement proceedings.¹⁷ In this case, the infringement court will also have to take into consideration the question of patentability¹⁸.

¹³ http://www.epo.org/patents/law/legal-texts/guidelines_de.html

¹⁴ Nonetheless, the particular situation may arise that older rights may be considered in German nullity proceedings, but not in European opposition proceedings.

¹⁵ FCJ - X ZR 29/93 *Zahnkranzfräser*

¹⁶ Busse/Keukenschrijver, German Patent Act, Sec. 140, marginal no. 6 *et seq.*

¹⁷ FCJ, Judgment of 6 May 2010 – Xa ZR 70/08 – *Maschinensatz* (Higher Regional Court Düsseldorf).

¹⁸ FCJ, Judgment of 6 May 2010 – Xa ZR 70/08 – *Maschinensatz*, marginal no. 49.

Construction of claims and interpretation of prior art

5. How are the claims construed in your jurisdiction? Are they read literally, or as would be understood by a person skilled in the art?

What is decisive is not the wording, but the meaning of a claim. The description and drawings in the patents are used to determine the meaning of a claim. This applies to German patents (sec. 14 German Patent Act) as well as to European Patents (Article 69 EPC).

The use of the description and drawings means that terms in a claim are to be construed as a person skilled in the art understands them based on the entire content of the specification taking into account the technical problem and solution of the invention. In an individual case, a term can have a different meaning within the scope of a particular specification than it normally has in the relevant technical field. When construing a claim in such a case, it is not the general technical jargon that is decisive but instead the meaning that follows from the specification itself¹⁹. A patent can be “its own lexicon” as it were.

The meaning of a claim is not a question of fact, but rather a question of law. A court must answer this question of law in both infringement and nullity proceedings on its own responsibility by means of an evaluative act. In particular, a court may not simply leave the construction of a claim up to an expert – although, along with the objective technical conditions, the construction must also take into account any prior understanding of the specialists working in the relevant field as well as knowledge, skills and experience and the methodical approach of these specialists²⁰. Nor may a court dismiss a patent infringement action on the grounds that the content of a claim is unclear²¹.

6. Is it possible to read embodiments from the body of the specification into the claims?

Embodiments of the invention that are described in a specification as being in accordance with the patent normally do not permit any limitation of a claim that generally characterises the invention²². For, as a general rule, embodiments only explain an invention as an example and not exhaustively. Thus, a possible meaning of a claim cannot be ruled out for the mere reason that it is not illustrated by an embodiment²³. However, embodiments are a part of the description and/or drawings that are to be used to determine the meaning of a claim (see question 5 above.).

7. How is the prior art interpreted? Is it read literally or interpreted as would be understood by a person skilled in the art? Is reliance on inherent disclosures (aspects of the prior art that are not explicitly mentioned but would be understood to be present by a person skilled in the art) permitted?

In the case of the prior art, as well, what is decisive is not the wording but rather the meaning according to an expert understanding. In addition to its actual wording, a prior art reference can also disclose what, from the perspective of a person skilled in the art, is obvious for the practice of the teaching described in the reference and, therefore, does not require special disclosure but is instead inferred. However, the fact that what is obvious can be included does not mean that the

¹⁹ FCJ, GRUR 1999, 909 (911-912) – *Spannschraube*; GRUR 2001, 232 (233) – *Brieflocher*; GRUR 2005, 754 (754) – *werkstoffeinstückig*, BGH – X ZR 23/97 (German Federal Patent Court) – *Extrusionskopf* (Mitt. 2000, 105)

²⁰ FCJ, GRUR 2009, 1059 (margin no. 38) – *Zerfallszeitmessgerät*

²¹ FCJ, GRUR 2009, 653 (margin no. 16) – *Straßenbaumaschine*

²² FCJ, judgment of 12 December 2006, X ZR 131/02 – *Schussfädentransport*

²³ FCJ, GRUR 2008, 779 (margin no. 34) – *Mehrgangnabe*

disclosure can be supplemented by technical knowledge, e.g. in order to include modifications, enhancements or conclusions²⁴.

Thus, the case law of the Federal Court of Justice has adopted the view of the EPO's Boards of Appeal, according to which only what, from the perspective of a person skilled in the art, can be "directly and unambiguously" derived is disclosed in a manner that destroys novelty.

8. Do the answers to any of the questions above differ during examination versus during litigation?

It generally does not make a difference whether the construction is carried out for the purpose of assessing patentability, in the granting procedure, opposition or nullity proceedings or in order to examine whether the patent is being infringed²⁵²⁶.

Combination or modification of prior art

9. Is it proper in your jurisdiction to find lack of inventive step or obviousness over a single prior art reference? If yes, and assuming the claim is novel over the prior art reference, what is required to provide the missing teaching(s)? Is argument sufficient? Is the level of the common general knowledge an issue to be considered?

Yes. A patent can be revoked or annulled if it is obvious with regard to a single document only. During a nullity procedure, the Federal Supreme Court usually asks: "(a) Which steps does the person skilled in the art have to carry out to attain the solution of the patent-in-suit? (b) Did the person skilled in the art have any motivation to make considerations in that direction? (c) What in detail are the reasons in favour or against that the person skilled in the art would have attained the solution of the patent-in-suit based on such considerations?"²⁷ It is decisive for the assessment of inventive step to consider the documents introduced in the procedure in combination with common technical knowledge.²⁸ In principle, the claimed subject matter can be assessed to be obvious already on the basis of a single prior art, e.g., if this prior art includes a motivation with regard to the claimed subject matter or if it is obvious what has to be done²⁹.

²⁴ FCJ, GRUR 2009, 382 (margin no. 25-29) – *Olanzapin*; GRUR 2010, 123 (margin no. 32) – *Escitalopram*; GRUR 2010, 910 (margin no. 62) – *Fälschungssicheres Dokument*

²⁵ BGH GRUR 2010, 858 (margin no. 13) – *Crimpwerkzeug III*; GRUR 2009, 837 (margin no. 15) – *Bauschalungsstütze*

²⁶ However, the FCJ points out that the concept of disclosure varies in its function depending on the context. When examining for novelty and for whether the technical teaching of an invention contained in a claim was disclosed in the application as filed, what matters is (as described above) whether a person skilled in the art can directly and unambiguously derive this teaching from the respective text under comparison. However, the situation is different when examining the practicability of an invention or when addressing the question of whether an embodiment contested in the infringement proceedings is protected by a patent. A practicable disclosure or infringement does not require (full) disclosure of an embodiment. Rather it is sufficient, in this context, if a person skilled in the art can, without inventive efforts of his own, fill in gaps and, if necessary, obtain clarity by relying on exploratory tests (FCJ, GRUR 2010, 916 (margin no. 17)– *Klammernahtgerät*).

²⁷ Benkard, PatG, § 4, Rz. 47

²⁸ BGH GRUR 1996, 862 – *Bodensegment*

²⁹ BGH – Xa ZR 92/05 – *Betrieb einer Sicherheitseinrichtung*

In the procedure at the EPO, the so-called “problem-and-solution approach” is applied in order to assess an inventive step³⁰. In the problem-and-solution approach, there are three stages: (i) determining the “closest prior art”, (ii) establishing the “objective technical problem” to be solved and (iii) considering whether or not the claimed invention starting from the closest prior art and the objective technical problem would have been obvious to the skilled person. It is permissible to combine the disclosure of pieces of prior art (e.g. a public prior use or unwritten general technical knowledge) with the closest prior art. In order to exclude a legally inadmissible ex-post-facto analysis, the EPO uses the “could-would approach”. Accordingly, an invention is not yet obvious if the person skilled in the art could have attained it on the basis of the prior art but only if he or she would have proposed it on the basis of a sufficient motivation in expectation of an enhancement or an improvement³¹. According to the German Federal Supreme Court, the assessment of the obviousness of a patent-protected subject cannot always be based on the “closest” prior art as the sole point of origin. The choice of a starting point (or of several starting points) needs a particular justification that, as a rule, can be derived from the efforts of the person skilled in the art to find for a certain purpose a better or just another solution than it is provided in the prior art (compare BGHZ 179, 168 numeral 51-Olanzapin).³²

The state of the art can be formed by the relevant common general knowledge, which needs not necessarily be in writing and needs substantiation only if challenged.³³

10. What is required to combine two or more prior art references? Is an explicit teaching or motivation to combine required?

In contrast to the examination of novelty, no individual comparison is carried out for the examination of the inventive step. Rather, the prior art has to be considered in its entirety (“mosaic-like”)³⁴. Only those disclosures of prior art that the person skilled in the art will consult can be considered for the formation of a mosaic³⁵. The recent case law of the Federal Supreme Court regularly focuses on the question whether the skilled person based on a disclosure of prior art had a motivation to attain the subject matter of the invention³⁶. It appears to be consistent to request such a motivation for the combination of two documents as well.

In particular, a combination of two or more different disclosures is possible if it is likely that the person skilled in the art would link them due to their content when studying the problem solved by the invention. It can be expected that the skilled person looks for motivations also in neighbouring fields and common technical fields³⁷ or even in remote fields of technology if he has a motivation for that³⁸, ³⁹. The linking of two or more parts of the same disclosure would be obvious if there is any clue for the skilled person to link these parts.

However, the fact that more than one disclosure has to be combined with the closest prior art in order to attain a combination of features can be a sign of the presence of an inventive step, e.g. if the claimed invention is not a mere aggregation of features. In determining whether it would be obvious to combine two or more distinct disclosures it has to be considered whether the content of the disclosures (e.g. documents) is such to make it likely or unlikely that the person skilled in the art, when faced with the problem solved by the invention, would combine them, or whether the disclosures come from similar, neighbouring or remote technical fields. (Guidelines C-IV, 11.6)

³⁰ Guidelines for Examination at the EPO, C-IV, 11.5

³¹ Busse/Keukenschrijver, PatG, § 4 Rdnr. 145

³² BGH – Xa ZR 138/05 – *Fischbißanzeiger*

³³ T939/92, Abl. 6/1996(Ri-Li C-IV, 11.2)

³⁴ Busse/Keukenschrijver, PatG, § 4 Rdnr. 32

³⁵ Busse/Keukenschrijver, PatG, § 4 Rdnr. 33

³⁶ BGH Decision of 30.4.2009, Xa ZR 92/05 – *Betrieb einer Sicherheitseinrichtung*

³⁷ T 176/84, Abl. 2/1986, 50, T 195/84, Abl. 2/1986, 121

³⁸ T 560/89, Abl. 12/1992, 725

³⁹ BGH, Decision of 31 August 2010 – X ZR 73/08 – *Gleitlagerüberwachung* (Bundespatentgericht)

However, the finding of a new teaching for technical actions cannot be assessed as not being based on an inventive activity if merely no obstacles are present to attain to the subject matter of this teaching based on the known prior art. Instead, this evaluation requires that the known prior art gave a reason or motivation to attain to the proposed teaching⁴⁰.

11. When two or more prior art references are combined, how relevant is the closeness of the technical field to what is being claimed? How relevant is the problem the inventor of the claim in question was trying to solve?

For answering the question whether the combination of two or more distinct disclosures is obvious, the examiner of the EPO verifies in particular whether the disclosures are from similar, neighbouring or remote technical fields. It can be expected that the skilled person searches for motivations in neighbouring and common technical fields⁴¹ or even in remote fields of technology, if he has any motivation ⁴², in particular, if “according to the kind of the problems that arise there, in principle, solutions can be expected as they are needed”.⁴³

According to the case law of the Federal Supreme Court it is also of importance, how similar or close-by the technical fields are. Recourses on insights from other fields of technology are definitely possible in particular cases. Hence, the consultation of experts or of other better qualified skilled persons or inquiries to the relevant skilled person can be expected if the problem to be solved arises in a close-by field of technology in a similar way for if he or she recognises on the basis of his or her own knowledge that he or she may find a solution in another field. ⁴⁴.

According to the recent German practice the problem formulated in the application or patent specification is not suitable for the determination of the inventive step. ⁴⁵ Rather it is focussed on the question what the claimed solution actually achieves vis-à-vis the prior art. ⁴⁶ In contrast, the EPO case law relies on the problem-solution-approach for the assessment of inventive step as already mentioned above.

In particular cases, the problem can supportively substantiate the inventive step and can be an indication for the presence of an inventive step, for example, if the creation of a problem would not have been possible for the skilled person who knows all common problems. ⁴⁷ However, problems that are common to the skilled person can never support an inventive step.

12. Is it permitted in your jurisdiction to combine more than two references to show lack of inventive step or obviousness? Is the standard different from when only two references are combined?

In the context of the problem-solution approach, it is permissible to combine the disclosure of one or more documents, parts of documents or other pieces of prior art with the closest prior art. A fixed upper limit for the number of documents that has to be exceeded as an indication for the presence of an inventive step, does not exist. However, the fact that more than one disclosure

⁴⁰ BGH, Decision of 08.12.2009 – X ZR 65/05 (BPatG) – *einteilige Öse*

⁴¹ T 176/84, ABI. 2/1986, 50, T 195/84, ABI. 2/1986, 121, BGH Xa ZR 69/06 – *Telekommunikationseinrichtung*

⁴² T 560/89, ABI. 12/1992, 725

⁴³ BGH X ZR 49/09 – *Ziehmaschinenzugeinheit II*

⁴⁴ BGH Decision of 29.9.2009, X ZR 169/07- *Diodenbeleuchtung*

⁴⁵ BGH Bausch 1994/98, 159, 166 – Betonring; GRUR 2005, 141, 142 – *Anbieten interaktiver Hilfe*

⁴⁶ Benkard/Asendorf/Schmidt, PatG, § 4 Rdnr. 12

⁴⁷ BPatGE 21, 43, 47; 32, 25, 28; T0225/84; T0645/88; T0301/89

must be combined with the closest prior art in order to attain a combination of features can be a sign of the presence of an inventive step, e.g. if the claimed invention is not a mere aggregation of features⁴⁸. At least if none of the three or more combined documents forms part of the common technical knowledge it will in general be difficult to show the necessary motivation for a combination of three documents without making use of a ex-post-facto-analysis.

13. Do the answers to any of the questions above differ during examination versus during litigation?

As already mentioned above, in a patent infringement procedure defendant cannot defend himself by the objection of a lack of validity of the patent-in-suit. The principles for the assessment of the inventive step are used in the same way in the examination, opposition and nullity procedure. Hence, there is no room for different ways to proceed regarding the combination of published documents. However it has to be pointed to the differing distribution of the burden of proof in the examination, opposition and nullity procedure.

Technical Problem

14. What role, if any, does the technical problem to be solved play in determining inventive step or non-obviousness?

The objective technical problem plays an important role in examining whether the teaching according to the patent was obvious:

As part of the “problem-solution approach” applied by the EPO, one must examine whether the prior art contains suggestions that would (not only could, but would) cause a person skilled in the art who is dealing with this technical problem to take the approach according to the patent (“could/would approach”⁴⁹). However, the applicant’s subjective ideas, such as, for example, the mention of a certain technical problem in the description and its assignment to a certain claim, do not help determine the claimed subject matter.⁵⁰

The FCJ also assumes a technical problem that has been objectively solved (contribution to the art) and examines whether the prior art offers suggestions for seeking the solution to the technical problem by means of the invention.⁵¹

However, the technical problem on its own is not an invention. The invention can only lie in its solution.⁵²

15. To what degree, if any, must the technical problem be disclosed or identified in the specification?

The objective technical problem does not have to be explicitly mentioned in the description. However, according to Rule 42 (1) c) of the *Implementing Regulations to the European Patent Convention 2000*, the description shall disclose the invention in such terms that the technical problem, even if not expressly stated as such, and its solution can be understood. Yet, non-compliance with this rule is not a ground for opposition or nullity *per se*.

⁴⁸ Guidelines for Examination at the EPO, C-IV, 11.6

⁴⁹ *Guidelines for Examination in the EPO* [as at 1 April 2010], part C IV 11.5.3

⁵⁰ FCJ – X ZR 23/97 (German Federal Patent Court) – *Extrusionskopf*

⁵¹ FCJ GRUR 2009, 746 – *Betrieb einer Sicherungseinrichtung*; GRUR 2010, 607 – *Fettsäurezusammensetzung*; GRUR 2010, 407 – *einteilige Öse*

⁵² FCJ GRUR 1984, 194 – *Kreiselegge*

The EPO and the FCJ agree that the technical problem as specified in the description is not binding, but that the technical problem is to be determined in an objective manner. However, the EPO and BGH use different approaches when making this objective determination:

According to the *Guidelines for Examination in the EPO* (as at 1 April 2010), part C IV 11.5.2, in order to establish the technical problem, one studies the application (or the patent), the closest prior art and the difference (also called the distinguishing feature(s) of the claimed invention) in terms of the features (structural or functional) between the claimed invention and the closest prior art, identifies the technical effect resulting from the distinguishing features, and then formulates the technical problem. In order to avoid an ex post facto view being taken, the technical problem must be formulated in such a way that it does not contain any pointers to the technical solution. Whether a reformulation of the technical problem is necessary depends on the facts. Generally, any effect of the invention can be used as a basis for the reformulation of the technical problem, provided that the corresponding effect can be derived from the application in the version originally submitted⁵³. New effects which the applicant first reports on in the proceedings can also be taken into account, provided that it is apparent to a person skilled in the art that these effects are implied in or related to the technical problem initially suggested^{54, 55}. However, subjective ideas of the Applicant do not help determine the claimed subject matter⁵⁶; nor do they help determine the objectively solved technical problem to be taken into account with respect to the inventive activity.

Ineffectiveness of a prior art device – or of such a procedure – that is not discovered or alleged until after the priority or filing date cannot be used for formulating the technical problem⁵⁷. For, what is decisive when assessing the inventive step is the knowledge of a person skilled in the art on the priority or filing date. Yet, in any case in the field of chemistry and biotechnology it is not unusual for the results of comparative tests carried out after the priority or filing date to be referred to – to make a prima facie case for the technical problem that has been objectively solved and therefore to assess the inventive step.

Knowledge that does not arise until after the filing or priority date may not be used to form the technical problem.⁵⁸

The FCJ's approach does not attach special significance to the closest prior art when determining the "problem" (the technical problem that has been objectively solved). According to the FCJ (GRUR 2010, 602 – *Gelenkanordnung*), determining the technical problem on which a patent is based is part of the interpretation of the claim. Statements in the description of the patent that concern the "technical problem" of the invention can contain a reference to the correct understanding of the claim. However, with respect to such statements – and with respect to the entire remaining content of the specification – the claims of the patent are decisive. The technical problem must be developed from what the invention actually achieves. Non-technical specifications are to be attributed (if at all) to the technical problem and not to the solution of the problem⁵⁹.

Advantageous effects

⁵³ see T 386/89, not published in the OJ

⁵⁴ see IV, 11.11 and T 184/82, OJ 6/1984, 261

⁵⁵ *Guidelines C-IV*, 11.5.2

⁵⁶ FCJ – X ZR 23/97 (German Federal Patent Court) – *Extrusionskopf*

⁵⁷ T 0268/89, OJ 94, 50

⁵⁸ T 0268/89, OJ 94, 50

⁵⁹ FCJ GRUR 2010, 44 – *Dreinahtfolienschlauchbeutel*, margin no. 14; BGH 26.10.2010, - X ZR 47/07 - *Wiedergabe topografischer Informationen* margin no. 39

16. What role, if any, do advantageous effects play in determining inventive step or non-obviousness?

Advantageous effects of the invention that the skilled person could have expected based on the prior art are generally indications in disfavour of an inventive step, since they represent a reason to modify the prior art into a direction of the invention. However, unexpected and surprising advantageous effects have to be distinguished as to whether they belong to an objective contribution of the invention with regard to prior art and, therefore, have to be incorporated in the problem-solution-approach, or whether they are a bonus effect due to the application of a measure that is per se obvious. In the latter case they are part of the auxiliary criteria (previously: "indications of evidence") that are used for the assessment of inventive step according to German law and according to EPO case law, but that cannot reason the inventive step nor replace it taken alone.⁶⁰ In individual cases these auxiliary criteria can give a reason to verify very critically solutions that are known in prior art as to whether they give sufficient indications for an obviousness of the subject matter of the invention vis-à-vis the common technical knowledge and do not appear to include a motivation leading to the invention merely in an ex-post-facto analysis. ⁶¹ Every consideration with regard to inventive step has to orient along the wording of Art. 4 of the German Patent Act and Art. 56 EPC according to which an invention is considered to be based on an inventive step if it is not obvious to a skilled person in view of the prior art. Therefore, the standard of examination for the inventive step is not any degree of inventive merit but solely the answer to the question whether or not the invention is obvious for the skilled person. A new directive for technical actions is obvious if the known prior art gave a motivation or a reason to the skilled person to attain the new teaching. ⁶² However, it is not sufficient that the new teaching does not have any advantageous effects. Advantageous effects that are a necessary result of an obvious measure and that are a windfall profit for the skilled person without any own inventive activity cannot contribute to the adjudication of an inventive step. (compare case law of EPO with regard to "bonus effects").

17. Must the advantageous effects be disclosed in the as-filed specification?

Generally, the skilled person can rely on advantageous effects for the assessment of an inventive step even if these effects are not mentioned in the original application documents but implicitly result from the application only. However, this approach reaches a limit when an entirely new problem is proposed based on the (not disclosed) advantageous effects as a basis for the invention. A change of the problem in such a way is not accepted by the boards of appeal of the EPO.

Hence, care is required if new effects are mentioned to support an inventive step. Such new effects can only be considered if they are implicit in the original problem as it results from the application as originally filed or if the new effects are at least related to it. ^{63,64}

The assessment according to German practice is similar. Advantages and precious characteristics have to be originally disclosed if they are used to reason an inventive step. ⁶⁵

"Advantages not mentioned in the patent specification or advantages that are not recognizable for the skilled person on the basis of his or her technical knowledge at the priority date cannot be

⁶⁰ BGH, GRUR 1991, 120 - *elastische Bandage*; GRUR 2007, 997 - *Wellnessgerät*

⁶¹ BGH, GRUR 2010, 44 - *Dreinahtschlauchfolienbeutel*

⁶² BGH, GRUR 2010, 407 - *Einteilige Öse*

⁶³ Guidelines for Examination at the EPO, C IV, 11.5.2, T 386/89, nicht im ABl. veröffentlicht, und T 184/82, ABl. 6/1984, 261

⁶⁴ Guidelines for Examination at the EPO, C-IV, 11.11

⁶⁵ Schulte § 34, Rn 399, referring to BGH GRUR, **60**, 543, *Flugzeugbetankung*

considered for the assessment of an inventive step” 66. Advantages that give the invention its actual meaning if they are used cannot be considered. 67

18. Is it possible to have later-submitted data considered by the Examiner?

Advantageous effects that are disclosed in the application as originally filed or advantageous effects that are at least implicitly disclosed in the application can be proved by later filed data, results of comparative tests etc.

However, a later inclusion of the advantageous effects in the application documents is not admissible according to the permanent and long standing practice of the EPO and German Patent and Trademark Office. Such results are merely taken to the file and on the first page of the patent specification it will be mentioned that the files of examination contain technical information that has been submitted after the filing date of the application.

19. How “real” must the advantageous effects be? Are paper or hypothetical examples sufficient?

The advantageous effects have to be plausible. In individual cases a theoretical example can be sufficient for furnishing a prima facie evidence.

In certain cases later filed examples and new effects, even if they cannot be included in the application, can be considered by the examiner as an evidence to support patentability of the invention as claimed. For example, an additional example can be considered as an evidence that the invention can be practiced in the entire range as claimed without further ado using the details in the application as originally filed. 68 A new effect 69 can also be considered as an evidence to support an inventive step if the new effect is implicit in an effect that is disclosed in the application as originally filed or if it is at least related to it. 70, 71

20. Do the answers to any of the questions above differ during examination versus during litigation?

Answers to questions 16 to 19 are the same independent of whether the inventive step is assessed at the patent offices (German Patent and Trademark Office and EPO) or the relevant courts (German Federal Patent Court, German Federal Supreme Court, infringement courts).

Teaching away

21. Does your jurisdiction recognize teaching away as a factor in favor of inventive step / non-obviousness? Must the teaching be explicit?

If the state of the art suggests another approach than the patent application or the patent (“teaching away”), that speaks in favour of the fact that the skilled person had no motivation to

⁶⁶ Benkard, a.a.O., § 4, Rdnr. 56, BGH – *Hubwagen*, GRUR 1971, 403

⁶⁷ Benkard, a.a.O., § 4, Rdnr. 56, BGH – *Flugzeugbetankung*, GRUR 1960, 542, BGH – *Einlegesohle*, GRUR 1962, 83

⁶⁸ Guidelines for Examination EPO, C III, 6.3

⁶⁹ Guidelines for Examination EPO, C VI, 5.3.4, the effect mentioned there

⁷⁰ Guidelines for Examination EPO, C IV, 11.10

⁷¹ Guidelines for Examination EPO, C VI, 5.3.5

follow the way of the application or the patent⁷². However, such circumstance of the case is not just given due to the fact that the claimed subject matter is based on balancing advantages against drawbacks with respect to the state of the art⁷³, or that a drawback is merely accepted⁷⁴.

On the other hand, an inventive step cannot be affirmed only in cases where the skilled person finds indications which cause him to proceed in another way than that of the invention, but it will normally be affirmed if he does not find hints or motivations for further developing the state of the art in the direction of the invention. Consequently, it is not necessary that the state of the art explicitly advises the skilled person to follow a technical teaching which is not consistent with the teaching of the invention, if the teaching of the invention shall be assessed as not obvious.

It can be assessed as a positive indicator of evidence for an inventive step, if the technical development went into another direction before the date of the application, in particular if paths have been taken which lead away from the invention, or if a successful renunciation from a hitherto conventional concept is proposed⁷⁵.

A renunciation of commonly used paths shall also be considered when assessing an inventive step⁷⁶.

22. Among the other factors supporting inventive step / non-obviousness, how important is teaching away?

In contrast to other secondary criteria, information in the state of the art which prevents the skilled person from further developing the state of the art in the direction of the invention, are strong indicators that the invention is not obvious from the state of the art.

23. Is there any difference in how teaching away is applied during examination versus in litigation?

No. Indications in the state of the art which cause the skilled person to further develop the state of the art in another direction than the invention have the same impact in examination proceedings and in judicial disputes.

Secondary considerations

24. Are secondary considerations recognized in your jurisdiction?

According to German law as well as in the practice of the European Patent Office, secondary considerations can be considered for assessing the inventive step. In fact, they may offer an indication against obviousness in individual cases, but they cannot substitute the evaluation of the content of the state of the art⁷⁷. Only in individual cases, they may cause for a particularly critical examination of known solutions, whether these solutions comprise indications for obviousness of

⁷² BGH – X ZR 115/96 – *Stoßwellen – Lithotripter*, BGH Xa ZR 92/05 – *Betrieb einer Sicherheitseinrichtung*

⁷³ BGH X ZR 24/03 – *Mikrotom*

⁷⁴ BGH X ZR 49/94 – *Rauchgasklappe*

⁷⁵ T 229/85, T 221/86

⁷⁶ BGH GRUR 99, 145 *Stoßwellen-Lithotripter*

⁷⁷ BGH, GRUR 2007, 997 – *Wellnessgerät*; BGH, GRUR 1991, 120 – *Elastische Bandage*; BGH, Urteil vom 29. Juni 2010 – X ZR 49/09 – *Ziehmaschinenzugeinheit II*

the invention in view of the common technical knowledge, and not only from an ex-post view seem to comprise an indication which leads to the invention⁷⁸.

25. If yes, what are the accepted secondary considerations? How and to what degree must they be proven? Is a close connection between the *claimed* invention and the secondary considerations required?

Secondary considerations which are most often applied are⁷⁹:

- a) An economic success, which is (essentially) based on the invention of the patent in dispute (and not on other factors like e.g. marketing)
- b) Overcoming difficulties
- c) Satisfaction of a long lasting need
- d) Evidence of attempts of others which were in vain
- e) Unexpected technical progress like improvement, simplification, cost savings
- f) Overcoming prejudices
- g) Momentum of time⁸⁰
- h) Unexpected, surprising result
- i) Deviation from the paths hitherto taken⁸¹

If one refers to secondary considerations, they have to be proven. Which evidence is most convincing depends on which secondary considerations the patent applicant or the patent owner refers for the evidence of the inventive step. Evidence is for example citations, expert opinions, results of comparative experiments, turnover before and after the subject matter of the invention has been introduced on the market, license revenues, praising comments among experts, etc. There must be a demonstrable causal relationship between the secondary considerations and the claimed invention.

26. Do the answers to any of the questions above differ during examination versus during litigation?

The answers to the questions 24 and 25 apply to the examination, opposition and invalidity proceedings as well as to litigation.

Other considerations

27. In addition to the subjects discussed in questions 4 - 26 above, are there other issues, tests, or factors that are taken into consideration in determining inventive step / non-obviousness in your jurisdiction?

Before it is actually evaluated whether the proposed technical teaching is based on an inventive step, the subject matter of the patent, the appropriate skilled person and the relevant state of the art are determined.

⁷⁸ BGH, GRUR 2010, 44 – *Dreinahtschlauchfolienbeutel*

⁷⁹ Pagenberg, Beweisanzeichen auf dem Prüfstand - Für eine objektive Prüfung auf erfinderische Tätigkeit, GRUR Int. 1986, 83ff

⁸⁰ BGH, Urteil vom 29. Juni 2010 – X ZR 49/09 – *Ziehmaschinenzugeinheit II*

⁸¹ BGH GRUR 1999, 145- *Stoßwellen-Lithotripter*

The subject matter of the patent is defined by the patent claims, which can be interpreted by the description and the drawings. Terms used in the claims have to be interpreted in the same way like the skilled person who is addressed understands them while taking into account the objective solution disclosed therein⁸².

The appropriate person skilled in the art, whose view is relevant, is considered to be a fictive person, who is working in the field of the invention and who has average knowledge, experience and competences. The appropriate skilled person has average expertise and skills. The expertise has to be demonstrated by published state of the art and the expertise and skills have to be demonstrated by textbooks, models, drawings or other materials, i.e. by materials which show reliable indications about the actual knowledge and skills of the person skilled in the art at the priority date. The skilled person in charge is not necessarily a single person. If it is useful, the appropriate person skilled in the art will consult a second skilled person or work within a team⁸³.

During examination of the inventive step, the “state of the art” is deemed to be the complete state of the art (with the exception of prior applications), which is also the basis for the examination of novelty. A mosaic like synopsis of the state of the art is the basement, from which the inventive step has to be assessed. It is not sufficient that the invention is inventive in view of single citations. Only the synopsis of the state of the art can also disclose wrong technical beliefs – which probably have been overcome by the invention – or the course of the technical development. The closest state of the art which is named in the patent publication is merely understood as a possible initial point for inventive thoughts of the person skilled in the art, but not as a determination. In some cases, several initial points are possible and have to be investigated, because there is no sole closest state of the art. In the opinion of the Federal Court of Justice, the choice of an initial point (or also several initial points) needs a particular justification, which is regularly to be derived from the effort of the person skilled in the art to find for a specific purpose a better – or just another – solution than that which is provided by the state of the art (see BGHZ 179, 168 Tz. 51 – Olanzapin). In the opinion of the Federal Court of Justice, neither the German Law nor the European Patent Convention provides a basis to apply solely a “closest” state of the art⁸⁴.

If yes, please describe these issues, tests, or factors.

Test

28. What is the specific statement of the test for inventive step/non-obviousness in your jurisdiction? Is there jurisprudence or other authoritative literature interpreting the meaning of such test and , if so, provide a brief summary of such interpretation.

For judging the inventive step, the European Patent Office uses nearly without exception the so called problem solution approach. It is structured in three phases:

- a) Identification of the “closest state of the art”
- b) Determination of the “objective technical problem” to be solved, and
- c) Examination of the question, whether the claimed invention would have been obvious for the skilled person in view of the closest state of the art and the objective technical problem.

⁸² BGH, GRUR 2001, 232 - *Briefflocher*

⁸³ Schulte, Patentgesetz mit EPÜ, 8. Auflage, § 4, Rdn. 39-41; Richtlinien für die Prüfung im EPA, Teil C - Kap. IV 11.3

⁸⁴ BGH, GRUR 2009, 1039 - *Fischbissanzeiger*

In the third phase it has to be clarified whether there is a teaching in the state of the art as a whole, which would cause the skilled person who is working on the objective technical problem, to modify or adapt the closest state of the art in view of that teaching, and thus to arrive at something which falls under the patent claim, and to achieve what is achieved by the invention⁸⁵.

The Federal Court of Justice regards the “problem solution approach” insofar critically, as it requests already in a first step the choice of the closest state of the art, because the closest state of the art can only be determined ex post being aware of the invention. Only in a retrospective view it will become visible which prior publication comes closest to the invention, and how the developer could have approached in order to arrive at the solution of the invention. Therefore, the choice of the initial point needs the justification, which is normally given by the effort of the skilled person to find a better solution for a particular purpose than the solution which is provided by the state of the art⁸⁶. Therefore, in the view of the Federal Court of Justice, the “closest state of the art” cannot always be taken as sole initial point when judging the obviousness of a patented subject matter⁸⁷. For the Federal Court of Justice, the answers to the following questions are relevant for assessing the inventive step (see questions of evidence of the Federal Court of Justice in the invalidity appeal procedure):

- a) Which steps the skilled person had to perform in order to arrive at the teaching of the patent in dispute?
- b) To what extent the skilled person had a motivation to make considerations in this direction?
- c) What in detail argues for or against the fact that the skilled person would have arrived at the solution of the patent in dispute on the basis of such considerations?

According to German law, the appraisal whether the invention was obvious or not is finally always necessary, including a synopsis of all relevant citations in consideration of the knowledge and the competence of the person skilled in the art.

29. Does such test differ during examination versus during litigation?

As discussed above with respect to question 28, the methods of assessing the inventive step do not differ in their application in the European and German proceedings.

Patent granting authorities versus courts

30. If there are areas not already described above where the approach to inventive step / non-obviousness taken during examination diverges from that taken by courts, please describe these areas.

No further cases apart from question 29 (EPO vs FCJ).

31. Is divergence in approach to inventive step / non-obviousness between the courts and the patent granting authority in your jurisdiction problematic?

The different approach of the EPO and the German Federal Patent Court/FCJ can result in divergent decisions, for example where the patent is initially maintained in the opposition

⁸⁵ Richtlinien für die Prüfung im EPA, Teil C - Kap. IV 11.5.3

⁸⁶ BGH, GRUR 2009, 28 Rdn. 51 - *Olanzapin*

⁸⁷ BGH, GRUR 2009, 1039 - *Fischbissanzeiger*

proceedings before the EPO and then contested by a nullity action before the German Federal Patent Court/FCJ.

A European patent can also be nullified (possibly only) due to prior art that has already been taken into account in opposition or opposition appeal proceedings before the EPO relating to the same patent.⁷²

Regional and national patent granting authorities

32. If you have two patent granting authorities covering your jurisdiction, do they diverge in their approach to inventive step / non-obviousness?

Yes (see answers to questions 28 and 29)

33. If yes, is this problematic?

Yes, because this can lead to different assessments of the question of the inventive step.

II. Proposals for harmonization

The Groups are invited to put forward proposals for the adoption of harmonised rules in relation to the patentability criteria for inventive step / non-obviousness. More specifically, the Groups are invited to answer the following questions without regard to their national laws:

34. Is harmonization of inventive step / non-obviousness desirable?

Yes.

35. Is it possible to find a standard for inventive step / non-obviousness that would be universally acceptable?

36. Please propose a definition for inventive step / non-obviousness that you would consider to be broadly acceptable.

37. Please propose an approach to the application of this definition that could be used by examiners and by courts in determining inventive step / non-obviousness.

In the opinion of the German Committee, the problem solution approach which is usually applied in the practice of the European Patent Office is for the large majority of the cases a practical approach for the test of the existence of an inventive step. It is based on the legal definition in Art. 56 EPC (European Patent Convention) or § 4 PatG (German Patent Law), according to which an invention is deemed to be based on an inventive step if it is not obvious from the state of the art for a person skilled in the art⁸⁹. As it is generally known, the problem solution approach is structured in three phases:

- i) Identification of the “closest state of the art” und the objective differences to the claimed solution
- ii) Determination of the “objective technical problem” to be solved, and

⁷² FCJ GRUR 96, 757 *Zahnfräser*

⁸⁹ see question 1

- iii) Examination of the question, whether the claimed invention would have been obvious to a skilled person in view of the closest state of the art and the objective technical problem.

In phase ii), objective distinctive features between the claimed invention and a particular prior published document which comes close to the invention will be determined, and from the determination of the distinctive features it will be derived which problem has been solved “objectively” in view of this difference. In phase iii) it has to be clarified in accordance with the so-called “could-would approach”, whether the skilled person on the one hand had the technical possibilities to carry out the invention (“could”), and whether he would have proposed it on the basis of the state of the art, his expertise and his skills as the solution of the problem (“would”). In this context it has to be examined whether the skilled person, taking into consideration the objective technical problem, had a motivation to amend a particular state of the art, which forms the initial point of his considerations, in a way that he arrives at something which falls under the patent claim, and achieves something which is achieved by the invention. The determination of the inventive step in this way has to be the result of a judgmental consideration – prospective – from the perspective of the skilled person who is usually involved in the problem on the priority date, where it mainly will have to be considered which motivations he gained from the further state of the art.

A certain difficulty of this method is given by the fact that the bodies which are handling this question (courts, granting authorities), in practice have to put themselves in a person (the “person skilled in the art”), who owns other knowledge and skills than they do, and thus have to conduct that judgemental consideration at a foreign measure. This judgemental consideration thus is a legal question and not a question of facts, and therefore should in general not be subject to an offer for evidence (different from the initial point for the assessment of the inventive step derived from actual indications, the determination of the knowledge and skills of the person skilled in the art)⁹⁰.

In the opinion of the German Committee it is a central point for the assessment of the inventive step to avoid a retrospective view (being aware of the invention). Because ex-post – well knowing the invention – many things seem simple which were not visible without such knowledge (in particular with the beliefs prevailing in the state of the art, which have been overcome initially by the invention).

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Note: It will be helpful and appreciated if the Groups follow the order of the questions in their Reports and use the questions and numbers for each answer. If possible type your answers in a different colour. Thank you for your assistance.

⁹⁰ see the Resolution AIPPI Q213

Summary

According to Article 56 Sentence 1 EPC, an invention is considered as involving an inventive step if, having regard to the state of the art, it is not obvious to a person skilled in the art. In this regard, a key criterion for the Federal Court of Justice is whether a person skilled in the art was *prompted* in any way to develop the state of the art along the lines of the subject-matter of the invention.

When examining for inventive step, the European Patent Office applies the “problem-and-solution approach”, in which the first step involves determining the closest prior art. In a second step, the features which objectively distinguish the claimed invention from a specific previously published document close to the invention are determined, and on the basis of these distinguishing features the objective technical problem to be solved is established. In a third phase, it must then be clarified whether a person skilled in the art had the technical possibility of carrying out the invention and whether he *would* have proposed it, on the basis of the prior art and his technical knowledge, as a solution to the problem (“*would have*” as opposed to “*could have*”).

In the view of the German Group, the problem-and-solution approach used by the European Patent Office is a practical point of departure for examining whether an inventive step is involved. The establishment of inventive step in this way must be the result of an *evaluational, prospective* approach – from the perspective of the skilled person who is normally faced with the stated problem addressed by invention on the date of priority. It is essential to avoid any retrospective approach (based on knowledge of the invention). This evaluational approach is therefore a legal question and for that reason is not amenable to discovery. However, examiners and judges need to be particularly well trained to perform this difficult evaluation and arrive at objectively correct conclusions.

Zusammenfassung

Gemäß Art. 56 Satz 1 EPÜ, § 4 Satz 1 PatG gilt eine Erfindung als auf einer erfinderischen Tätigkeit beruhend, wenn sie sich für den Fachmann nicht in naheliegender Weise aus dem Stand der Technik ergibt. Der Bundesgerichtshof stellt in diesem Zusammenhang insbesondere darauf ab, ob der Fachmann eine *Anregung* hatte, den Stand der Technik in Richtung des Erfindungsgegenstandes weiterzuentwickeln.

Das Europäische Patentamt verwendet im Rahmen der Prüfung des erfinderischen Schrittes den so genannten “Aufgabe-Lösung-Ansatz”. Hiernach ist in einem ersten Schritt der nächstliegende Stand der Technik zu ermitteln. Sodann werden in einem zweiten Schritt die objektiven Unterscheidungsmerkmale zwischen der beanspruchten Erfindung und einem bestimmten der Erfindung nahe kommendem vorveröffentlichten Dokument bestimmt und anhand dieser Unterscheidungsmerkmale die der Erfindung zugrundeliegende Aufgabe ermittelt. In einer dritten Phase ist dann zu klären, ob der Fachmann einerseits die technischen Möglichkeiten hatte, die Erfindung auszuführen, und andererseits, ob er sie auf Grundlage des Standes der Technik und seines Fachwissens als Lösung der Aufgabe vorgeschlagen haben *würde* (nicht auf „*hätte können*“, sondern tatsächlich „*haben würde*“).

Nach Ansicht der deutschen Landesgruppe stellt der Aufgabe-Lösung-Ansatz des Europäischen Patentamtes im Ausgangspunkt einen praktikablen Zugang zur Prüfung der erfinderischen Tätigkeit dar. Die Bestimmung der erfinderischen Tätigkeit muss auf diesem Wege das Ergebnis einer *wertenden* Betrachtung – prospektiv – aus der Perspektive des üblicherweise mit der Aufgabe der Erfindung am Prioritätstag befassten Fachmanns sein. Eine rückschauende Betrachtung (mit Kenntnis der Erfindung) ist zu vermeiden. Diese wertende Betrachtung ist somit eine Rechtsfrage und damit einem Beweisangebot nicht zugänglich. Zur Erzielung sachgerechter Ergebnisse bedarf es allerdings für diese schwierige Bewertung besonders gut geschulte Prüfer bzw. Richter.

Résumé

Selon l'article 56 CBE phrase 1 et le § 4 phrase 1 de la loi allemande sur les brevets, une invention est considérée reposer sur une activité inventive si elle ne découle pas, pour l'homme du métier, d'une manière évidente de l'état de la technique. Dans ce contexte, la Cour fédérale se base en particulier sur le fait de savoir si l'homme du métier a été *incité* à perfectionner l'état de la technique en direction de l'objet de l'invention.

L'Office Européen des Brevets utilise, dans le cadre de l'examen de l'activité inventive, ce qu'il est convenu d'appeler "l'approche problème-solution". D'après celle-ci, il faut, lors d'une première étape, déterminer l'état de la technique le plus proche. Ensuite, lors d'une seconde étape, les caractéristiques distinctives objectives entre l'invention revendiquée et un document défini déjà publié qui se rapproche de l'invention et le problème technique objectif sur lequel repose l'invention est déterminé à l'aide de ces caractéristiques distinctives. Dans une troisième phase, il faut alors tirer au clair si l'homme du métier avait, d'une part, les possibilités techniques de réaliser l'invention et, d'autre part si, sur la base de l'état de la technique et de ses compétences techniques, il *l'aurait* proposée comme solution au problème technique objectif (non pas il „*aurait pu*“ mais il „*l'aurait*“ effectivement fait).

Du point de vue du groupe de langue allemande, « l'approche problème solution » de l'Office Européen des Brevets constitue, dans son point de départ, une approche praticable pour l'examen de l'activité inventive. La détermination de l'activité inventive doit être de cette manière le résultat d'une considération *d'appréciation* – prospective – à partir de la perspective de l'homme du métier qui examine habituellement le problème technique objectif de l'invention le jour de la priorité. Une considération de manière rétrospective (avec connaissance de l'invention) doit être évitée. Cette considération d'appréciation est donc une question de droit et ne relève pas de l'apport de preuves. Toutefois, pour obtenir des résultats appropriés à l'état de fait, on a besoin, pour cette appréciation difficile, d'examineurs ou encore de juges particulièrement bien formés.

Exhibit 6

Exhibit 6

Nachschlagewerk: ja
BGHZ: nein
BGHR: ja

PatG § 1

Elastische Bandage

Zur Frage der Berücksichtigung von Markterfolg und Nachahmung durch Mitbewerber bei der Beurteilung der erfinderischen Tätigkeit einer Lehre zum technischen Handeln.

BGH, Urt. v. 18. September 1990 - X ZR 29/89 - Bundespatentgericht

BUNDESGERICHTSHOF

IM NAMEN DES VOLKES

X ZR 29/89

URTEIL

Verkündet am:
18. September 1990
Meyer
Justizangestellte
als Urkundsbeamter
der Geschäftsstelle

in der Patentnichtigkeitssache

der B Anlagen GmbH, W straÙe , K ,
gesetzlich vertreten durch ihren Geschäftsführer Hans
B , ebenda,

Beklagten und Berufungsklägerin,

- Prozeßbevollmächtigter:

gegen

1. Heinz Sch KG, Norddeutsche Gummistrumpffabrik,
M allee , F , gesetzlich vertreten durch
ihren persönlich haftenden Gesellschafter Heinz
Sch , ebenda,

Klägerin I und Berufungsbeklagte,

- Prozeßbevollmächtigte:

2. G & Company AG, Gr straÙe , St
(Schweiz), gesetzlich vertreten durch ihren Vorstand
Werner G ebenda,

Klägerin II und Berufungsbeklagte,

- Prozeßbevollmächtigte:

- 2 -

Streithelferin auf seiten der Klägerinnen:

Firma W & V GmbH & Co. KG, Wa.
, Bayreuth, gesetzlich vertreten durch ihre persönlich
haftende Gesellschafterin, die W & V
Beteiligungs-Gesellschaft mbH, diese gesetzlich vertreten
durch ihre Geschäftsführer Wolfgang W. und Günter
V.

- Prozeßbevollmächtigte:

Hinweis: Auch Teile der Urteilsammlung sind als Datenbank nach §§ 87a ff. UrhG geschützt.



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Der X. Zivilsenat des Bundesgerichtshofes hat auf die mündliche Verhandlung vom 18. September 1990 durch den Vorsitzenden Richter Dr. Bruchhausen und die Richter Rogge, Dipl.-Ing. Frhr. von Maltzahn, Dr. Jestaedt und Dr. Broß

für Recht erkannt:

Die Berufung gegen das Urteil des 2. Senats (Nichtigkeitssenats II) des Bundespatentgerichts vom 21. September 1988 wird auf Kosten der Beklagten mit der Maßgabe zurückgewiesen, daß Ziffer 1 des Urteilstenors folgende Fassung erhält:

Das europäische Patent 0 027 172 wird mit Wirkung für das Hoheitsgebiet der Bundesrepublik Deutschland für nichtig erklärt.

Von Rechts wegen

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Tatbestand:

Die Beklagte ist Inhaberin des am 30. August 1980 unter Beanspruchung der Priorität der Voranmeldung vom 7. September 1979 in der Bundesrepublik Deutschland angemeldeten europäischen Patents 0 027 172 (Streitpatents). Der gegen die Patenterteilung eingelegte Einspruch der Klägerin I ist von der Einspruchsabteilung des Europäischen Patentamts zurückgewiesen worden. Die dagegen eingelegte Beschwerde der Klägerin I hat die Technische Beschwerdekammer des Europäischen Patentamts zurückgewiesen.

Das Streitpatent betrifft eine Bandage aus elastischem Bandagenstoff. Patentanspruch 1 des Streitpatents hat folgenden Wortlaut:

1. Bandage aus elastischem Bandagenstoff, insbesondere in Schlauchform für die Abstützung bzw. Kompression von Knie-, Sprung-, Ellbogen- und/oder Handgelenken, mit wenigstens einer im angelegten Zustand die Knochenvorsprünge des Gelenks umgebenden, die benachbarten Gelenkweichteile beaufschlagenden Kompressionseinlage, d a d u r c h g e k e n n - z e i c h n e t , daß die Kompressionseinlage aus elastischem, jedoch inkompressiblem Silikonkautschuk oder einem Material mit gleichen Elastizitäts- und Kompressionseigenschaften besteht.

Wegen der Unteransprüche 2 bis 4 wird auf die Streitpatentschrift verwiesen.

Die Klägerinnen machen geltend, die beanspruchte Erfindung sei im Streitpatent nicht in einer Weise offenbart, daß ein Fachmann sie ausführen könne. Außerdem sei der Gegenstand des Streitpatents gegenüber den ursprünglichen Anmel-

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dungsunterlagen unzulässig erweitert worden. Schließlich sei der Gegenstand des Streitpatents nicht patentfähig, da er nicht auf einer erfinderischen Tätigkeit beruhe, sondern sich in naheliegender Weise aus dem vorgelegten druckschriftlichen Stand der Technik ergebe.

Das Bundespatentgericht hat das Streitpatent für nichtig erklärt.

Mit der Berufung verfolgt die Beklagte ihren Antrag auf Abweisung der Nichtigkeitsklage weiter.

Die Klägerinnen beantragen, die Berufung zurückzuweisen.

Im Berufungsrechtszug ist die Firma W. & V. GmbH & Co. KG dem Rechtsstreit als Streithelferin der Klägerinnen beigetreten, da die Beklagte sie wegen Patentverletzung aus dem Streitpatent gerichtlich in Anspruch genommen hat. Die Streithelferin schließt sich dem Antrag der Klägerinnen an.

Als Gerichtsgutachter hat Professor Dr.-Ing. G. E. , Direktor des Instituts für Te. der De. In. für Te. - und Fa. forschung, Stu. , ein schriftliches Gutachten erstattet, das er in der mündlichen Verhandlung erläutert und ergänzt hat.

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Entscheidungsgründe:

Die Berufung der Beklagten hat keinen Erfolg.

I.

Das Streitpatent betrifft eine Bandage aus elastischem Bandagenstoff - insbesondere in Schlauchform für die Abstützung oder Kompression von Knie-, Sprung-, Ellbogen- und/oder Handgelenken - mit wenigstens einer im angelegten Zustand die Knochenvorsprünge des Gelenks umgebenden, die benachbarten Gelenkweichteile beaufschlagenden Kompressionseinlage. Solche Bandagen werden bei Gelenkverletzungen, wie sie beim Sport vorkommen, aber auch bei degenerativen Gelenkveränderungen verwendet. In der Streitpatentschrift ist angegeben, daß die Kompressionseinlage der bekannten, meist schlauch- oder strumpfförmigen, aus elastischen Gummi- oder Kunststoffäden hergestellten Bandagen, aus Schaumkunststoff hergestellt sei. Die bekannten Bandagen übten aufgrund ihrer Elastizität zwar eine stützende und gleichzeitig massierende Wirkung aus, die der Resorption des sich bei Gelenkverletzungen fast immer bildenden entzündlichen Ergusses dienen solle. Die Durchblutung sei insgesamt jedoch unbefriedigend, weil diejenigen Bereiche des Schaumkunststoffes, auf die keine Belastung ausgeübt werde, auch keine Kompression erführen und sich die massierende Wirkung deshalb auf diese Bereiche nicht erstrecke, so daß dort die Durchblutung nach wie vor unbefriedigend bleibe. Ziel der Erfindung sei es, eine Bandage so zu gestalten, daß bei Gelenkverletzungen ein schnelles Abschwellen und eine bessere Resorption des Ergusses bewirkt und ein angenehmeres Tragen der Bandage erreicht werde.

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Dieses Ziel soll erfindungsgemäß dadurch erreicht werden, daß die Kompressionseinlage aus elastischem, jedoch inkompressiblem Silikonkautschuk oder einem Material mit gleichen Elastizitäts- und Kompressionseigenschaften besteht.

II.

1. Die Streitpunkte der unzulässigen Erweiterung, unzureichenden Offenbarung und Neuheit der Erfindung können unerörtert bleiben. Denn die Berufung der Beklagten kann jedenfalls deshalb keinen Erfolg haben, weil die Lehre des Patentanspruchs 1 gegenüber dem Stand der Technik nicht auf erfinderischer Tätigkeit beruht.

2. In der Streitpatentschrift ist angegeben, daß die in Patentanspruch 1 geschützte Bandage sich von den bereits bekannten elastischen Bandagen nur darin unterscheide, daß die Kompressionseinlage aus "elastischem, jedoch inkompressiblem Silikonkautschuk oder einem Material mit gleichen Elastizitäts- und Kompressionseigenschaften besteht". Auch aus dem vorgelegten Stand der Technik ergibt sich, daß elastische Bandagen, die der Abstützung bzw. Kompression von Gelenken dienen, bekannt waren (vgl. etwa CH-PS 152 404; DE-PS 25 51 847; US-PS 3 194 233; AT-PS 181 686). Es war auch bereits bekannt, die Schaumstoffeinlage mit einer Aussparung zu versehen, die das Gelenk u-förmig oder ringförmig umschließt und die auf dem Gelenk benachbarte Weichteile einwirkt, diese massiert und dort die Durchblutung fördert (DE-AS 1 015 364). Bekannt war auch der positive Einfluß einer massierenden Wirkung auf die Heilung eines Gelenk-

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ergusses (vgl. Sp. 1 Z. 18-22 d. Streitpatentschrift). Das alles ist zwischen den Parteien unstreitig und bedarf daher keiner weiteren Erörterung.

In der DE-OS 27 22 563 ist eine Pelotte für Rückenstützbandagen beschrieben, die aus Silikonkautschuk besteht. Es heißt dort, daß die bisher zur Abstützung der Kreuz- und Lendenwirbel benutzten Schaumstoffpolsterungen deshalb unvorteilhaft seien, weil die Druckübertragung wegen der mangelhaften Anpassungsfähigkeit von Schaumstoffen nicht optimal sei, so daß Druck- und Scheuerstellen entstünden (aaO S. 4). Als Vorteil der Verwendung von Silikonkautschuk wird demgegenüber eine weitgehend gleichmäßige Druckübertragung herausgestellt, da sich die gallert- bzw. gelartige Masse jeder Körperform ausgezeichnet anpasse. Durch diesen "Kugellagereffekt" würden Druck- und Scheuerstellen vermieden. Aus dieser Schrift entnimmt der Fachmann, wie der gerichtliche Sachverständige zur Überzeugung des Senats dargelegt hat, daß die an einer Beanspruchungsstelle aufgebrauchten Kräfte bei Verwendung von Silikonkautschuk (einem Elastomer) sich auf den ganzen eingespannten Bereich übertragen. Die Kräfte steigen mithin bei den in Betracht kommenden Verformungen über den ganzen Bereich etwa linear mit der Dehnung an.

Es lag für den Fachmann nahe, die bei der Verwendung von Silikonkautschuk-Pelotten in Rückenstützbandagen beschriebene Druckverteilung bei elastischen Bandagen mit Kompressionseinlagen nutzbar zu machen, wenn es darum ging, bei Gelenkverletzungen das Anschwellen und die Resorption von Blutergüssen in den das Gelenk umgebenden Weichteilen

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zu fördern. Einen Hinweis, es insoweit mit Silikonkautschuk als Kompressionseinlage elastischer Bandagen zu versuchen, erhielt der Fachmann allein schon durch eine Bemerkung in den Gebrauchsmusterunterlagen 78 21 156, wo angegeben ist, daß die Abpolsterung einer Beinprothese mit Silikonkautschuk zu einer Verbesserung der Durchblutung des Beinstumpfes führt. Es wird beschrieben, daß der "weitgehend inkompressible, jedoch verformbare" Silikonkautschuk eine "außerordentlich starke Massagewirkung auf den Stumpf" ausübe, wodurch eine wesentliche Verbesserung der Durchblutung im Stumpfbereich eintrete (aaO S. 2). Ob sich diese Lehre bei der Anwendung der Polsterung von Prothesen bewährte oder, wie der Beklagte behauptet, später als unbrauchbar verworfen wurde, kann dahinstehen. Da der Fachmann (- ein Ingenieur der Werkstofftechnik, dem orthopädische und allgemeinmedizinische Kenntnisse zuzurechnen sind -) zur damaligen Zeit wußte, daß ein schnelleres Abschwellen bei Gelenkverletzungen und eine bessere Resorption des damit verbundenen Ergusses ebenfalls eine Frage der Durchblutung ist, wie der gerichtliche Sachverständige bestätigt hat, wurde der mit der Entwicklung elastischer Bandagen befaßte Fachmann durch die DE-OS 27 22 563 und das DE-GM 78 21 156 angeregt, sich die im einzelnen beschriebenen durchblutungsfördernden Wirkungen von Silikonkautschuk nutzbar zu machen und mindestens den Versuch zu unternehmen, bei elastischen Bandagen die beschriebenen vorteilhaften Wirkungen von Silikonkautschuk durch Verwendung einer Kompressionseinlage aus diesem Material zu erproben. Der Senat folgt dem gerichtlichen Sachverständigen, daß diese Erprobung eine für jeden Fachmann naheliegende Maßnahme war.

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Diese Bewertung steht nicht in Widerspruch zur Entscheidung der Technischen Beschwerdekammer des Europäischen Patentamts, durch die das Streitpatent aufrechterhalten worden ist. Denn der Technischen Beschwerdekammer lag weder die DE-OS 27 22 563 noch das DE-GM 78 21 156 vor, so daß sie den Stand der Technik nicht vollständig hat würdigen können.

3. Das Bundespatentgericht hat erwogen, ob die von der Beklagten behauptete "Imitation und der Markterfolg" der von ihr vertriebenen patentgemäßen Bandagen "die Erfindungshöhe ... begründen" könnten. Sollte dieser Formulierung die Vorstellung zugrunde liegen, daß eine verbreitete Imitation oder ein großer Markterfolg die erfinderische Tätigkeit einer Lehre zum technischen Handeln "begründen" im Sinne von "ersetzen" könne, so wäre das ebenso rechtsirrig, wie die gegenteilige Ansicht, für Hilfserwägungen ("Beweisanzeichen", "Indizien") sei bei der Suche nach der Antwort auf die Frage, ob sich eine Lehre zum technischen Handeln für den Fachmann in naheliegender Weise aus dem Stand der Technik ergebe, kein Raum mehr, wenn die Entgegenhaltungen aus dem Stand der Technik abgehandelt sind. Die Entscheidung darüber, ob eine neue Lehre auf erfinderischer Tätigkeit beruht, kann nur durch eine Beurteilung aller Umstände des Falles gewonnen werden. Das abschließende Urteil setzt die Abwägung aller Elemente eines komplexen Sachverhalts voraus, wozu auch die Hilfserwägungen gehören. Eine in die Beurteilung der erfinderischen Tätigkeit einzubeziehende Hilfserwägung kann ein großer Markterfolg dann sein, wenn er auf einer sprunghaften (überraschenden) Bereicherung des Standes der Technik beruht, hingegen nicht, wenn er auf ein erfolgreiches Marketing oder darauf zurückzuführen ist, daß

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ein Marktteilnehmer preisgünstiger als seine Mitbewerber produziert, weil er z.B. als erster auf am Markt angebotene, billigere Grundstoffe für sein Produkt zugegriffen hat. In gleicher Weise kann eine umfangreiche Nachahmung durch Mitbewerber als Hilfserwägung in die wertende Beurteilung der erfinderischen Tätigkeit dann einzubeziehen sein, wenn sie darauf zurückzuführen ist, daß das neue Produkt den bisher am Markt angebotenen technisch deutlich überlegen ist und zurückverfolgt werden kann, daß die einschlägigen Fachfirmen überkommenen technischen Vorstellungen verhaftet geblieben sind und einen etwa zeitlich weit zurückreichenden Stand der Technik nicht aufgegriffen haben. Auf die Beurteilung der erfinderischen Tätigkeit ohne Einfluß wäre demgegenüber, wenn ein die technische Lehre schließlich nahelegender Stand der Technik bisher übersehen worden ist oder deswegen nicht zur Entwicklung eines marktfähigen Produkts geführt hat, weil es aus Preisgründen nicht absatzfähig gewesen ist. Denn das Verdienst, etwas im Stand der Technik angelegtes als erster aufgegriffen und daraus einen Markterfolg gemacht zu haben, an den sich die Mitbewerber durch Nachahmung anhängen wollen, ist kein technisches, sondern ein kaufmännisches.

Im Streitfall können die von der Beklagten ins Feld geführten, auf einen großen Markterfolg und eine umfangreiche Nachahmung gestützten Hilfserwägungen nicht zu einer Feststellung der erfinderischen Tätigkeit führen, weil der Stand der Technik dem Fachmann nach den überzeugenden Darlegungen des gerichtlichen Sachverständigen durch die DE-OS 27 22 563 und das DE-GM 78 21 156 hinreichende Anregung gegeben hat, zu der Lehre des Patents zu gelangen. In

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einem solchen Fall können Markterfolg und Nachahmung durch Mitbewerber den beim Studium des Falles anhand der Druckschriften gewonnenen ersten Eindruck von der mangelnden erfinderischen Tätigkeit wegen Naheliegens nicht wiederwenden, zumal beide erörterten patenthindernden Schriften im Herbst 1978 und damit erst knapp zwei Jahre vor dem Anmeldetag des Streitpatents veröffentlicht worden sind.

Die vom Hauptanspruch abhängigen Unteransprüche fallen mit diesem. Einen selbständigen erfinderischen Gehalt der Unteransprüche macht die Beklagte nicht geltend.

4. Die Kostenentscheidung beruht auf § 110 Abs. 2 PatG.

Bruchhausen

Rogge

Maltzahn

Jestaedt

Broß

Exhibit 7

Exhibit 7



About / Corporate Overview

Corporate Overview

Microchip Technology Incorporated is a leading provider of smart, connected and secure embedded control solutions. Its easy-to-use development tools and comprehensive product portfolio enable customers to create optimal designs, which reduce risk while lowering total system cost and time to market. The company's solutions serve more than 120,000 customers across the industrial, automotive, consumer, aerospace and defense, communications and computing markets. Headquartered in Chandler, Arizona, Microchip offers outstanding technical support along with dependable delivery and quality.

Relationship

Are you looking for a business partner, not just a vendor? Do you want quality components?

Successful companies recognize the value of a strategic supplier relationship to help them deliver innovative products to their markets in a timely manner. They trust their suppliers to furnish quality components for current design opportunities as well as provide technology road maps and innovative solutions to stay ahead of tomorrow's design trends.

Migrate

Are you upgrading your product? Do you need additional memory or peripherals?

Cut down your revision cycle time. Designing-in our devices allows easy migration throughout our entire portfolio of devices. Upgrading your product with drop-in replacements and reusable code has never been easier with our **MPLAB® Integrated Development Environment (IDE)** and similar pin-to-pin compatible devices*. Our easy-to-use product roadmaps display the migration path for every product family with specifications, peripherals and highlights to pinpoint the best range of devices.

Embed

What are your design goals? What is your application?

Our product line is the solution for your embedded design needs. From cost-competitive analog and memory devices to high-performance PIC® microcontrollers (MCUs) and dsPIC® Digital Signal Controllers (DSCs), our devices provide a custom fit in your cost-sensitive design. Quickly integrate our devices into applications from simple to complex. Our starter kits and free reference designs can help get you going.

Use our product selection tools and Development Tools Selector (DTS) to review our entire product line and find the right devices wherever you are in the design cycle.

Succeed

What is the bottom line? Do you want the competitive edge?

In today's highly competitive market conditions, our goal is to provide the best devices, value and support to reduce your risk and streamline your time to market. We've added resources to aid in every aspect of your design from start to finish with easy-to-use product selection tools, 24/7 global technical support, web-based online training, Regional Training Centers (RTCs) and a well-trained team of field personnel. Our commitment to customer satisfaction is exemplified by our IATF16949 qualifications. With our free evaluation samples and 24-hour inventory, pricing and ordering through microchipDIRECT, it's never been easier to meet your product launch schedules.

**Contact Microchip for details on migration strategy and product family compatibility.*

Quality and Reliability
Our Quality System is based on the elements and criteria specified by IATF16949, the highest quality system certification mandated by the world's major automotive customers. The specified controls apply to all stages of design and manufacturing.

Legal Information
Check here for information on copyrights, trademarks, policies and liability limitations.

Read MicroSolutions, our blog, to read about the latest product updates, developer insights, trends and innovations and more.

Do you want to learn more about our corporate culture? Check out **Driving Excellence: How the Aggregate System Turned Microchip Technology from a Failing Company to a Market Leader** by Michael J. Jones and Steve Sanghi.

Microchip Technology's Embedded Control Solutions

Microchip Technology Inc. is a leading provider of microcontroller and analog semiconductors, providing low-risk product development, lower total system cost and faster time to market for thousands of diverse customer applications worldwide. Headquartered in Chandler, Arizona, Microchip offers outstanding technical support along with dependable delivery and quality.

Exhibit 8

Exhibit 8

MENU

Arizona - Global Sales & Distribution

Microchip Office



Microchip Technology Inc.
2355 W. Chandler Blvd.
Chandler, Arizona 85224
United States of America
Phone :480-792-7200
Website : <http://www.microchipdirect.com>

Representative



Mindshare Technical Sales (All ICs, Discretes and Components)
7340 East Main Street
Suite #101
Scottsdale, Arizona 85251

Phone :480-945-7157
Fax :480-945-7156
Website : <http://www.mindsharetechnical.com>

Distributor



Allied Electronics
Fiesta Corporate Center
1921 S. Alma School Rd. - Suite 210
Mesa, Arizona 85210
United States of America
Phone :1-800-433-5700
Fax :480-831-2411
Website : <http://www.alliedelec.com>



Arrow Electronic Components
1955 East Sky Harbor Circle North
Phoenix, Arizona 85034
United States of America
Phone :602 687-4600
Fax :602 687-4646
Website : <http://www.arrow.com>



Avnet Electronics

2211 S. 47th Street
Phoenix, Arizona 85034
United States of America

Phone :1-800-408-8353
Website : <http://em.avnet.com/mcc>



Digi-Key Electronics
701 Brooks Ave., South
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Thief River Falls, Minnesota 56701
United States of America
Phone :+1-800-344-4539
Fax :+1-218-681-3380
Website : <http://www.digikey.com/en/supplier-centers/m/microchip-technology>

Digi-Key Electronics
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P. O. Box 677
Thief River Falls, Minnesota 56701
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Fax :+1-218-681-3380
Website : <http://www.digikey.com/en/supplier-centers/m/microchip-technology>



Dove Electronic Components, Inc.
39 Research Way
East Setauket, New York 11733
United States of America
Phone :631-689-7733
Website : <http://sales@doveonline.com>

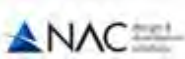


Future Electronics
4801 E. Washington Street
Suite 260-B
Phoenix, Arizona 85034
United States of America
Phone :1-800-444-0050
Fax :602 629-3033
Website : <http://www.futureelectronics.com>



Master Electronics
2425 South 21st Street
Phoenix, Arizona 85034
United States of America
Phone :+1-602-267-1111
Fax :+1-602-267-7070
Website : <http://www.masterelectronics.com>

Mouser Electronics
1000 N. Main Street
Mansfield, Texas 76063
United States of America
Phone :800-346-6873
Fax :817-804-3803
Website : <https://www.mouser.com/manufacturer/microchip/>



NAC Semi
1790 Commerce Avenue North
St Petersburg, Florida 33716
United States of America
Phone :727-828-0187
Website : <https://www.nacsemi.com/products/microchip/>



Newark element14
300 S. Riverside Plaza
Suite 2200
Chicago, Illinois 60606
United States of America
Phone :+1 800 463 9275
Fax :+1 800 551 4801
Website : <http://www.newark.com/b/microchip>



Phoenixics Electronics
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Phone :+1-978-856-0111
Website : <http://www.phoenixicelectronics.com>



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1950 S. Batavia Avenue
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Geneva, Illinois 60134
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Phone :1-800-737-6937
Fax :1-630-262-6850
Website : <http://www.richardsonrfpd.com>



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Western United States Sales Office
1850 E. Ray Road, Suite #2
Chandler, Arizona 85225
United States of America



Spirit Electronics
11202 N 24th Ave
Phoenix, Arizona 85029
United States of America
Phone :(480) 998-1533
Fax :(480) 998-1427



USI Electronics
2775 W. Cypress Creek Road
Fort Lauderdale, Florida 33309
United States of America
Phone :1-800-874-8111
Website : <http://www.usielectronics.com>

Die Distributor



ES Components
Die, Military & Aerospace Products
108 Pratts Junction Road
Sterling, Massachusetts 01564
United States of America
Phone :978-422-7641
Fax :978-422-0011
Website : <http://www.escomponents.com/microchip>



Micross Components
7725 N orange Blossom Trail
Orlando, Florida 32810
United States of America
Phone :407-298-7100
Fax :407-290-0164
Website : <http://www.micross.com>

Exhibit 9

Exhibit 9

AMPERSAND Partnerschaft von Rechtsanwälten mbB
Widenmayerstraße 4 · D-80538 München

Landgericht München I
Prielmayerstraße 7
80335 München

A M P E R S A N D

per beA

VERFASSEN/AUTHOR

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DATUM/DATE

11. Januar 2022

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Klage

In der Sache

Arigna Technology Ltd.,

Gerald Padian, Suite 23, The Hyde Building Carrickmines, Dublin 18, Irland,
vertreten durch die Directors Ciaran O'Gara, Sean O'Sullivan und Gerald Padian

- Klägerin -

Prozessbevollmächtigte:

AMPERSAND
Partnerschaft von Rechtsanwälten mbB,
Widenmayerstraße 4, 80538 München

g e g e n

Bayerische Motoren Werke AG,

Pertuelring 130, 80809 München,
vertreten durch den Vorstand Oliver Zipse, Ilka Horstmeier, Milan Nedeljkovic,
Pieter Nota, Nicolas Peter, Frank Weber und Andreas Wendt

- Beklagte -

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wegen: Patentverletzung

Streitwert (vorläufig geschätzt): EUR 1 Mio.

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erheben wir namens und in Vollmacht der Klägerin

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und werden **beantragen**, wie folgt zu erkennen:

I. Die Beklagten werden verurteilt,

1. es bei Meidung eines für jeden Fall der Zuwiderhandlung vom Gericht festzusetzenden Ordnungsgeldes bis EUR 250.000,00, ersatzweise Ordnungshaft bis zu sechs Monaten, im Wiederholungsfalle Ordnungshaft von bis zu zwei Jahren, wobei die Ordnungshaft an dem Vorstand bzw. den Geschäftsführern der Beklagten zu vollziehen ist, zu unterlassen,

eine Schaltung mit einem Eingangsstromverstärker (100) und einer Einstellungsschaltung (200) zur Korrektur eines Offsets (I_{off}) eines Ausgangsstroms (I_o) des Eingangsstromverstärkers (100),

in der Bundesrepublik Deutschland anzubieten, in Verkehr zu bringen, zu gebrauchen oder zu den genannten Zwecken einzuführen, oder zu besitzen oder Dritte bei diesen Handlungen zu unterstützen,

- bei der die Einstellungsschaltung (200) eine gesteuerte Stromquelle (210) aufweist,

- bei der ein Ausgang (204) der gesteuerten Stromquelle (210) mit dem Eingangsstromverstärker (100) zur Einprägung eines Ausgangsstromes (I₁) der gesteuerten Stromquelle (210) in den Eingangsstromverstärker (100) verbunden ist,

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- bei der ein Eingang (219) der gesteuerten Stromquelle (210) zur Bildung eines Regelglieds eines Regelkreises durch eine erste Schaltvorrichtung (S1) der Einstellungsschaltung (200) mit dem Ausgang (102) des Eingangsstromverstärkers (100) verbunden und zur Bildung eines Halteglieds durch die erste Schaltvorrichtung (S1) von dem Ausgang (102) des Eingangsstromverstärkers (100) getrennt ist,
- bei der die als Regelglied wirkende gesteuerte Stromquelle (210) durch Bereitstellung eines Stromwertes des Ausgangsstroms (I1) zur Regelung des Offsets (Ioff) auf ein Minimum eingerichtet ist, und
- bei der die als Halteglied wirkende gesteuerte Stromquelle (210) zum Halten des zum Minimum zugehörigen Stromwertes des Ausgangsstroms (I1) eingerichtet ist.

(Anspruch 1 des DE 10 2009 060 504)

2. Schaltungen, die dazu geeignet sind, ein Verfahren zur Korrektur eines Offsets (Ioff) eines Ausgangsstroms (Ic) eines Eingangsstromverstärkers (100) einer Schaltung auszuführen,

in der Bundesrepublik Deutschland zur Verwendung in der Bundesrepublik Deutschland anzubieten oder zu liefern, oder Dritte bei diesen Handlungen zu unterstützen,

- bei dem eine gesteuerte Stromquelle (210) zur Bildung eines Regelglieds eines Regelkreises durch eine erste Schaltvorrichtung (S1) mit einem Ausgang (102) des Eingangsstromverstärkers (100) verbunden wird,
- bei dem durch Bereitstellung eines Stromwertes des Ausgangsstroms (I1) der als Regelglied wirkenden gesteuerten Stromquelle (210) der Offset (Ioff) auf ein Minimum geregelt wird, wenn ein Eingangssignal (Isig) des Eingangsstromverstärkers (100) einen konstanten Wert aufweist,

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- bei dem die gesteuerte Stromquelle (210) zur Bildung eines Halteglieds mit dem zum Minimum zugehörigen Stromwert des Ausgangsstroms (I1) durch die erste Schaltvorrichtung (S1) vom Ausgang (102) des Eingangsstromverstärkers (100) getrennt wird.

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(Anspruch 13 des DE 10 2009 060 504)

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3. der Klägerin darüber Auskunft zu erteilen, in welchem Umfang sie die zu I. 1. und I.2 bezeichneten Handlungen seit dem 4. Juli 2014 begangen haben, und zwar unter Angabe,

- a) der Namen und Anschriften der Hersteller, Lieferanten und anderer Vorbesitzer,
- b) der Namen und Anschriften der gewerblichen Abnehmer sowie der Verkaufsstellen, für die die Erzeugnisse bestimmt waren,
- c) der Menge der ausgelieferten, erhaltenen oder bestellten Erzeugnisse sowie der Preise, die für die betreffenden Erzeugnisse bezahlt wurden,

wobei die geschuldeten Angaben zu I. 3. a) und I. 3. b) sämtliche Lieferungen an den jeweiligen Abnehmer umfassen, unabhängig davon, ob die konkrete Lieferung von diesem Abnehmer auf dem Gebiet der Bundesrepublik Deutschland in Verkehr gebracht wurde,

wobei zum Nachweis der Angaben die entsprechenden Kaufbelege (nämlich Rechnungen, hilfsweise Lieferscheine) in Kopie vorzulegen sind,

wobei geheimhaltungsbedürftige Details außerhalb der auskunftspflichtigen Daten geschwärzt werden dürfen;

4. der Klägerin darüber Rechnung zu legen, in welchem Umfang sie die zu I. 1. und I. 2 bezeichneten Handlungen seit dem 3. August 2014 begangen haben, und zwar unter Angabe

- a) der einzelnen Lieferungen, aufgeschlüsselt nach Liefermengen, -zeiten und -preisen (und der jeweiligen Typenbezeichnungen) sowie Namen und Anschriften der Abnehmer,

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- b) der einzelnen Angebote, aufgeschlüsselt nach Angebotsmengen, -zeiten und -preisen (und der jeweiligen Typenbezeichnungen) sowie den Namen und Anschriften der Angebotsempfänger,
- c) der betriebenen Werbung, aufgeschlüsselt nach Werbeträgern, deren Auflagenhöhe, Verbreitungszeitraum und Verbreitungsgebiet, im Falle von Internet-Werbung nach der Domain (URL), der Zugriffszahlen und der Schaltungszeiträume jeder Kampagne,
- d) der nach den einzelnen Kostenfaktoren aufgeschlüsselten Gestehungskosten und des erzielten Gewinns,

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wobei die geschuldeten Angaben zu I. 4. a) sämtliche Lieferungen an den jeweiligen Abnehmer umfassen, unabhängig davon, ob eine konkrete Lieferung von diesem Abnehmer auf dem Gebiet der Bundesrepublik Deutschland in Verkehr gebracht wurde,

wobei den Beklagten vorbehalten bleibt, die Namen und Anschriften der nicht-gewerblichen Abnehmer und Angebotsempfänger statt der Klägerin einem von der Klägerin zu bezeichnenden, ihr gegenüber zur Verschwiegenheit verpflichteten, in der Bundesrepublik Deutschland ansässigen, vereidigten Wirtschaftsprüfer mitzuteilen, sofern die Beklagten dessen Kosten tragen und ihn ermächtigen und verpflichten, der Klägerin auf konkrete Nachfrage mitzuteilen, ob ein bestimmter Abnehmer oder Angebotsempfänger in der Aufstellung enthalten ist.

- II. Die Beklagten werden verurteilt, die unter I. 1. und I. 2 bezeichneten, seit dem 4. Juli 2014 in Verkehr gebrachten Erzeugnisse gegenüber den gewerblichen Abnehmern unter Hinweis auf den gerichtlich (Urteil des Landgerichts München I vom [...]) festgestellten patentverletzenden Zustand der Sache und mit der verbindlichen Zusage zurückrufen, etwaige Entgelte zu erstatten sowie notwendige Verpackungs- und Transportkosten sowie mit der Rückgabe verbundene Zoll- und Lagerkosten zu übernehmen und die Erzeugnisse wieder an sich zu nehmen.

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III. Es wird festgestellt,

- 1. dass die Beklagten verpflichtet sind, der Klägerin für die zu I. 1. und I. 2 bezeichneten, in der Zeit vom 30. Juli 2011 bis zum 2. August 2014 begangenen Handlungen eine angemessene Entschädigung zu zahlen;**
- 2. dass die Beklagten verpflichtet sind, der Klägerin allen Schaden zu ersetzen, der der Atmel Corp. in der Zeit vom 3. August 2014 bis zum 20. Dezember 2019 sowie der Sonraí Memory Ltd. in der Zeit vom 21. Dezember 2019 bis zum 25. Februar 2020 entstanden ist und der Klägerin seit dem 26 Februar 2020 durch die zu I. 1. und I.2 bezeichneten Handlungen entstanden ist oder noch entstehen wird.**

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IV. Die Beklagten tragen die Kosten des Rechtsstreits.

V. Das Urteil ist vorläufig - notfalls gegen Sicherheitsleistung - vollstreckbar; die Klägerin regt die Festsetzung der folgenden Teilsicherheitsleistungen an:

Klageanträge I.1. und I.2 (Unterlassung)	EUR 750.000,00
Klageantrag 1. 2 (Auskunft)	EUR 50.000,00
Klageantrag I. 3. (Rechnungslegung)	EUR 100.000,00
Klageantrag II. (Rückruf)	EUR 50.000,00
Klageantrag III (Vernichtung)	EUR 50.000,00

hilfsweise,

der Klägerin nachzulassen, die Zwangsvollstreckung wegen der Kosten gegen Sicherheitsleistung (Bank- oder Sparkassenbürgschaft) abzuwenden.

Soweit die Beklagten den Anspruch anerkennen oder falls die Beklagten entgegen § 276 ZPO ihre Verteidigungsbereitschaft nicht rechtzeitig anzeigen, wird bereits jetzt der

Erlass eines Anerkenntnis- bzw. Versäumnisurteils gegen die Beklagten im schriftlichen Verfahren beantragt.

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Begründung:

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A. Zum Tatsächlichen

I. Die Parteien

1. Die Klägerin ist mit Sitz in Dublin im Bereich der Monetarisierung von Patenten tätig. Das Angebotsspektrum reicht dabei von der Patentprüfung, -auswahl, -erstellung und -bewertung über Marktstudien, Teardowns und Akquisitionsfinanzierung bis hin zur Lizenzierung und gerichtlichen Durchsetzung entsprechender Schutzrechte.
2. Die Beklagte ist eine gerichtsbekannte börsennotierte Automobilherstellerin mit Sitz in München.

II. Zum Klagepatent

1. Formalia

3. Das Klagepatent mit der Bezeichnung „*Schaltung und Verfahren zur Einstellung eines Offset-Ausgangsstroms für einen Eingangsstromverstärker*“ und der Veröffentlichungsnummer DE 10 2009 060 504 B4 wurde am 23. Dezember 2009 ohne Inanspruchnahme einer Priorität angemeldet. Die Anmeldung des Klagepatents wurde am 30. Juni 2011 offengelegt. Die Patenterteilung wurde am 3. Juli 2014 veröffentlicht. Eine Kopie der Klagepatentschrift überreichen wir als

Anlage K 1.

4. Das Klagepatent steht in Kraft. Einen aktuellen Auszug aus dem Onlineregister des Deutschen Patent- und Markenamtes überreichen wir als

Anlage K 2.

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5. Ursprüngliche Inhaberin des Klagepatents war die Atmel Automotive GmbH mit Sitz in Heilbronn, Deutschland. Diese hat das Klagepatent nebst allen Ansprüchen wegen Patentverletzung in der Vergangenheit sowie zugehörigen Annexansprüchen mit Patentübertragungsvertrag vom 31. Dezember 2010 an die Atmel Corp. mit Sitz in San Jose, USA, übertragen, welche das Patent am 3. Juli 2014 zur Erteilung brachte.
6. Die Atmel Corp. hat das Klagepatent nebst allen Ansprüchen wegen Patentverletzung in der Vergangenheit sowie zugehörigen Annexansprüchen sodann mit Patentübertragungsvertrag vom 20. Dezember 2019 an die Sonraí Memory Limited mit Sitz in Dublin, Irland, übertragen.
7. Diese hat das Klagepatent schließlich nebst allen Ansprüchen wegen Patentverletzung in der Vergangenheit sowie zugehörigen Annexansprüchen mit Patentübertragungsvertrag vom 25. Februar 2020 an die Klägerin übertragen, die nunmehr aus dem Register als Inhaberin hervorgeht.

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2. Zum Stand der Technik und technischen Hintergrund

8. Die klagepatentgemäße Erfindung betrifft eine Schaltung und ein Verfahren zur Einstellung eines Offset-Ausgangsstroms für einen Eingangsstromverstärker (Abs. [0001] des Klagepatents).
9. Ausweislich der Ausführungen gemäß Abs. [0002] des Klagepatents waren dem Fachmann zum Anmeldezeitpunkt Stromverstärker, zum Beispiel sogenannte „CC-Operationsverstärker“ - im Klagepatent mit „CC-OPV“ abgekürzt - bekannt. Das Klagepatent verweist bezüglich dieser beispielhaften Stromverstärker auf die Seiten 563-565 des Fachbuches „Halbleiterschaltungstechnik“ von Tietze, Schenk in der 12. Auflage aus dem Jahr 2002.
10. Weiter führt das Klagepatent in Abs. [0003] aus, dass zum Anmeldezeitpunkt aus der Druckschrift US 2003/210092 A1 ein wechselstromgekoppelter, mehrstufiger Operationsverstärker mit hohem Verstärkungsfaktor bekannt war. Dieser beinhaltet zumindest zwei Verstärkerstufen, die jeweils einen Ein- und Ausgang haben, einen Wechselspannungskopplungskondensator, der den Ausgang der ersten Stufe mit dem Eingang der zweiten Stufe verbindet, und eine

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Ladeschaltung, die mit dem Wechsellspannungskopplungskondensator und dem Eingang der zweiten Stufe verbunden ist, um den Wechsellspannungskopplungskondensator in einer Spannungsfolgephase zu laden und den Wechsellspannungskopplungskondensator mit dem Eingang der zweiten Stufen während einer Haltephase zu verbinden, um die Biasspannungen der beiden Stufen zu trennen.

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11. Ebenfalls identifiziert das Klagepatent die US 5,565,813 A als zum Stand der Technik gehörig, die einen ähnlichen (Spannungs-)Differenzverstärker mit geschalteten Kapazitäten offenbare (a.E. des Abs. [0003] des Klagepatents).
12. Da es für die Lehre des Klagepatents im Weiteren nicht auf den Aufbau oder die Funktionsweise von beliebig kompatiblen Verstärkern ankommt, sehen wir an dieser Stelle von vertiefenden Erläuterungen zum Hintergrund der im Stand der Technik genannten Verstärker ab.
13. Das vom Klagepatent unter anderem adressierte Problem eines sogenannten **Offsets** erläutert dieses an späterer Stelle (Abs. [0047] des Klagepatents) exemplarisch an dem Ausführungsbeispiel nach Fig. 2a. Der dort gezeigte Eingangsstromverstärker weist zwei sogenannte Stromspiegel auf. Der Begriff „Stromspiegel“ deutet an, dass ein Eingangsstrom am Ausgang repliziert („gespiegelt“) wird. Wenn die Stromstärke des Eingangsstroms einen gewissen Verlauf aufweist, soll auch der gespiegelte Ausgangsstrom diesen Verlauf aufweisen. Dabei kann der Ausgangsstrom um einen bestimmten Faktor verstärkt oder reduziert sein – der „Spiegel“ kann den Strom proportional vergrößern oder verkleinern (wie bei einem Rasierspiegel). Die Stromspiegel werden in Fig. 2a durch die Transistoren 123 – 126 gebildet. Idealerweise soll das Übersetzungsverhältnis beider Stromspiegel exakt gleich sein. Dann ist gewährleistet, dass ein bestimmter Eingangsstrom ggf. mit dem gewählten Verstärkungs- bzw. Verringerungsfaktor am Ausgang fließt.

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14. Aufgrund von Prozessabweichungen/Schwankungen in der Herstellung von Verstärkertransistoren oder anderen Einflüssen kann es in der Realität allerdings zu Abweichungen von dem idealen Übersetzungsverhältnis kommen. Die Differenz kann als „Offset“(-Strom) beschrieben werden. Dieser Offset(-Strom) überlagert den gewünschten Ausgangsstrom am Schaltungsausgang (Abs. [0045] des Klagepatents). Das ist ungünstig, weil der Ausgangsstrom dadurch in unkontrollierter Weise von dem gewünschten Ausgangsstrom abweicht. Es ist daher wünschenswert, den Einfluss des Offset (-Stroms) zu verringern.

15. Mit Blick auf den vorstehenden Tatsachenvortrag bieten wir vorsorglich an:

Beweis: Sachverständigengutachten

3. Aufgabe und Lösung des Klagepatents

16. Das Klagepatent stellt sich vor diesem Hintergrund die Aufgabe, eine Schaltung mit einem Eingangsstromverstärker möglichst zu verbessern und ein möglichst verbessertes Verfahren zur Korrektur eines Offsets eines Eingangsstromverstärkers bereitzustellen.
17. Diese Aufgabe löst das Klagepatent mit den nachstehend gegliederten Merkmalen der unabhängigen Ansprüche 1 und 13:

Anspruch 1:

1. Schaltung mit einem Eingangsstromverstärker (100) und einer Einstellungsschaltung (200) zur Korrektur eines Offsets (I_{off}) eines Ausgangsstroms (I_o) des Eingangsstromverstärkers (100),
 - 1.1 - bei der die Einstellungsschaltung (200) eine gesteuerte Stromquelle (210) aufweist,
 - 1.2 - bei der ein Ausgang (204) der gesteuerten Stromquelle (210) mit dem Eingangsstromverstärker (100) zur Einprägung eines Ausgangsstromes (I₁) der gesteuerten Stromquelle (210) in den Eingangsstromverstärker (100) verbunden ist,
 - 1.3 - bei der ein Eingang (219) der gesteuerten Stromquelle (210)

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1.3.1 zur Bildung eines Regelglieds eines Regelkreises durch eine erste Schaltvorrichtung (S1) der Einstellungsschaltung (200) mit dem Ausgang (102) des Eingangsstromverstärkers (100) verbunden

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1.3.2 und zur Bildung eines Halteglieds durch die erste Schaltvorrichtung (S1) von dem Ausgang (102) des Eingangsstromverstärkers (100) getrennt ist,

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1.4 - bei der die als Regelglied wirkende gesteuerte Stromquelle (210) durch Bereitstellung eines Stromwertes des Ausgangsstroms (I1) zur Regelung des Offsets (Ioff) auf ein Minimum eingerichtet ist, und

1.5 - bei der die als Halteglied wirkende gesteuerte Stromquelle (210) zum Halten des zum Minimum zugehörigen Stromwertes des Ausgangsstroms (I1) eingerichtet ist.

Anspruch 13:

13. Verfahren zur Korrektur eines Offsets (Ioff) eines Ausgangsstroms (Ic) eines Eingangsstromverstärkers (100) einer Schaltung,

13.1 - bei dem eine gesteuerte Stromquelle (210) zur Bildung eines Regelglieds eines Regelkreises durch eine erste Schaltvorrichtung (S1) mit einem Ausgang (102) des Eingangsstromverstärkers (100) verbunden wird,

13.2 - bei dem durch Bereitstellung eines Stromwertes des Ausgangsstroms (I1) der als Regelglied wirkenden gesteuerten Stromquelle (210) der Offset (Ioff) auf ein Minimum geregelt wird, wenn ein Eingangssignal (Isig) des Eingangsstromverstärkers (100) einen konstanten Wert aufweist,

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13.3 - bei dem die gesteuerte Stromquelle (210) zur Bildung eines Halteglieds mit dem zum Minimum zugehörigen Stromwert des Ausgangsstroms (I1) durch die erste Schaltvorrichtung (S1) vom Ausgang (102) des Eingangsstromverstärkers (100) getrennt wird.

18. Die vorstehenden Merkmalsgliederungen überreichen wir als

Anlage K 3.

19. In Merkmal 1.2 des Anspruchs 1 des Klagepatents haben wir die Bezugsziffer „Ausgang (203) der gesteuerten Stromquelle (210)“ in „Ausgang (204) der gesteuerten Stromquelle (210)“ geändert. Hierbei handelt es sich lediglich um die Berichtigung eines offensichtlichen Tippfehlers. Wie sich zum Beispiel unschwer der Fig. 2a entnehmen lässt, befindet sich der Ausgang der gesteuerten Stromquelle (210) ersichtlich nicht bei der Bezugsziffer 203, sondern bei der Bezugsziffer 204.

4. Auslegung des Klagepatents

20. Der mit dem Klagepatent befasste Fachmann ist ein Elektroingenieur mit Hochschulabschluss und mehrjähriger Berufserfahrung im Bereich der Elektrotechnik, insbesondere im Bereich der Entwicklung und/oder Analyse von Verstärkerschaltungen.

a) Anspruch 1

21. **Merkmal 1** des Anspruchs 1 des Klagepatents sieht eine Schaltung mit einem Eingangsstromverstärker (100) und einer Einstellungsschaltung (200) zur Korrektur eines Offsets (I_{off}) eines Ausgangsstroms (I_o) des Eingangsstromverstärkers (100) vor.

22. Dass die Schaltung jedoch darüber hinaus noch weitere Komponenten aufweisen kann, ist dem Fachmann ohne weiteres bewusst. Es zeigt sich zudem in der bevorzugten Ausführungsform der Figur 3 des Klagepatents. Funktional muss die Schaltung nach Merkmal 1 dazu geeignet sein, den Offset des Ausgangsstroms des Eingangsstromverstärker nach Maßgabe der weiteren Merkmale zu korrigieren.

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23. **Merkmal 1.1** des Anspruchs 1 des Klagepatents sieht vor, dass die Einstellungsschaltung (200) eine gesteuerte Stromquelle (210) aufweist.
24. Unter einem Eingangsstromverstärker im Sinne des Klagepatents versteht der Fachmann einen Bereich bzw. ein Bauteil in einer Schaltungsanordnung, durch welchen bzw. welches eine Verstärkung eines Eingangsstroms erfolgt.
25. Eine gesteuerte Stromquelle gibt - wie der Name schon sagt - einen Strom in Abhängigkeit von einem Steuersignal aus (Abs. [0051] des Klagepatents). Das Steuersignal kann eine Spannung sein. In der bevorzugten Ausführungsform nach Fig. 2a ist die Steuerspannung auf einem Kondensator gespeichert (Abs. [0052] des Klagepatents).
26. Die weiteren Merkmale des Anspruchs 1 des Klagepatents befassen sich mit Einzelheiten der gesteuerten Stromquelle.
27. **Merkmal 1.2** des Anspruchs 1 des Klagepatents sieht zunächst vor, dass ein Ausgang (204) der gesteuerten Stromquelle (210) mit dem Eingangsstromverstärker (100) zur Einprägung eines Ausgangsstromes (I1) der gesteuerten Stromquelle (210) in den Eingangsstromverstärker verbunden ist.
28. Die gesteuerte Stromquelle stellt also klagepatentgemäß einen Ausgangsstrom bereit (vgl. Abs. [0009] des Klagepatents). Der Ausgang der gesteuerten Stromquelle ist ferner mit dem Eingangsstromverstärker verbunden. Unter „Verbinden“ bzw. „verbunden“ versteht der Fachmann in diesem Merkmal ebenso wie in den nachfolgenden Merkmalen eine physisch ausgeführte Einrichtung zum Zwecke einer Übertragung eines Signals – die verbundenen Teile der Schaltung können miteinander kommunizieren. Beispielsweise ermöglicht eine Verbindung, dass ein Strom zwischen zwei verbundenen Teilen fließt. Wie dem Klagepatent zu entnehmen ist, kann diese Verbindung direkt oder über weitere Komponenten ausgeführt sein. So führt das Klagepatent im Rahmen der Beschreibung der bevorzugten Ausführungsbeispiele aus, dass eine Stromquelle mit dem Ausgang des Eingangsstromverstärkers *verbunden* ist (Abs. [0049] des Klagepatents). Sodann führt das Klagepatent aus, dass diese Verbindung entweder über verschiedene weitere elektronische Bauteile ausgeführt werden kann, oder auch die Möglichkeit besteht, die Stromquelle *direkt an den Ausgang anzuschließen* (Abs. [0051] des Klagepatents). Das Klagepatent unterscheidet also, wie der Fachmann

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auch, zwischen dem weiteren „*verbinden*“ und dem unmittelbaren „*direkt anschließen*“. Klagepatentgemäß ist der Anspruch demnach nicht auf ein direktes Anschließen beschränkt. Funktional muss die Verbindung gemäß Merkmal 1.2 des Anspruches 1 des Klagepatents die „*Einprägung eines Ausgangstromes (...)*“ erlauben.

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29. Die **Merkmalsgruppe 1.3** des Anspruchs 1 des Klagepatents sieht vor, dass ein Eingang (219) der gesteuerten Stromquelle (210) zur Bildung eines Regelglieds eines Regelkreises durch eine erste Schaltvorrichtung (S1) der Einstellungsschaltung (200) mit dem Ausgang (102) des Eingangsstromverstärkers (100) verbunden und zur Bildung eines Halteglieds durch die erste Schaltvorrichtung (S1) von dem Ausgang (102) des Eingangsstromverstärkers (100) getrennt ist.
30. Diese auf den ersten Blick kompliziert anmutende Formulierung beschreibt lediglich, dass und wie die patentgemäße Schaltung zwei Zustände einnehmen kann. Sie kann nämlich jeweils in Abhängigkeit vom Schaltzustand der Schaltvorrichtung S1 - erstens - ein **Regelglied** eines Regelkreises (Merkmal 1.3.1 des Anspruchs 1 des Klagepatents) und - zweitens - ein **Halteglied** – (Merkmal 1.3.2 des Anspruchs 1 des Klagepatents) bilden.
31. Für das Gesamtverständnis der Lehre des Anspruchs 1 ist es zudem zweckdienlich, das Merkmal 1.3.1 gemeinsam mit dem **Merkmal 1.4** und das Merkmal 1.3.2 gemeinsam mit dem **Merkmal 1.5** in den Blick zu nehmen, da beide jeweils weitere Aspekte des Regel- bzw. Halteglieds beschreiben.
32. Das **Regelglied** eines Regelkreises im Sinne der **Merkmale 1.3.1 und 1.4** des Anspruchs 1 des Klagepatents wird gebildet (Merkmal 1.3.1), indem der Eingang der gesteuerten Stromquelle durch eine erste Schaltvorrichtung der Einstellungsschaltung mit dem Ausgang des Eingangsstromverstärkers verbunden ist. Schaltungstechnisch bedeutet dies, dass der Schalter zwischen dem Eingang (der gesteuerten Stromquelle) auf der einen Seite und dem Ausgang (des Eingangsstromverstärkers) auf der anderen Seite geschlossen ist, da ansonsten die erforderliche Verbindung unterbrochen wäre.

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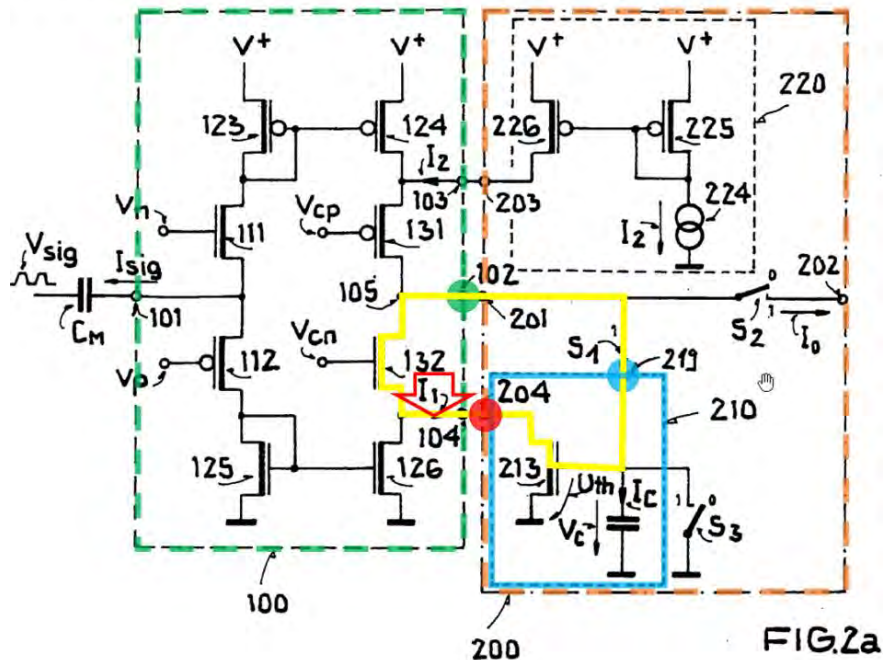
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33. Unter einer Verbindung der Einstellschaltung mit dem Ausgang des Eingangsstromverstärkers versteht das Klagepatent insbesondere auch eine so gestaltete indirekte Verbindung, die es erlaubt, den Ausgangsstrom des Eingangsstromverstärkers derart mit der gesteuerten Stromquelle zu verbinden, dass in dieser eine Spannung für die Regelung anliegt. Dies kann klagepatentgemäß in unterschiedlicher Ausgestaltung vorliegen, etwa über einen Transistor (Abs. [0052] des Klagepatents) oder in anderer Weise (Abs. [0067] des Klagepatents). Auch sind die Begriffe Eingang und Ausgang nicht notwendigerweise - wie in den Figuren des Klagepatents und teils den nachfolgend verwendeten Abbildungen zur Veranschaulichung dargestellt - im Sinne von klar eingrenzbaaren „Punkten“ in einer Schaltungsanordnung zu verstehen. Funktional entscheidend ist lediglich, dass entsprechende Schnittstellen vorliegen, die eine Verbindung im oben genannten Sinne darstellen und die erlauben, dass die beanspruchten Einheiten der Schaltung ihre patentgemäße Funktion ausführen können.
34. In der verbundenen Situation, wenn also der Schalter 1 geschlossen ist und eine Verbindung zwischen Ausgang des Eingangsstromverstärkers und der gesteuerten Stromquelle besteht, ist gemäß Merkmal 1.4 des Anspruchs 1 des Klagepatents die gesteuerte Stromquelle durch Bereitstellung eines Stromwertes des Ausgangsstroms (I_1) zur Regelung des Offsets (I_{off}) auf ein Minimum eingerichtet. Bei diesem Offset (I_{off}) handelt es sich, wie beschrieben, um den Offset des Ausgangsstroms (I_o) des Eingangsstromverstärkers (Merkmal 1 des Anspruchs 1 des Klagepatents).
35. Diese Zusammenhänge veranschaulichen wir nachfolgend nochmals auf der Grundlage des Ausführungsbeispiels gemäß **Fig. 2a** des Klagepatents. Dieses Ausführungsbeispiel enthält zwar auch einige (bevorzugte) Aspekte, die für die weiter gefassten geltend gemachten Ansprüche 1 und 13 nicht relevant sind. Für die allgemeine Verdeutlichung der grundlegenden Lehre des Anspruchs 1 des Klagepatents kann es dennoch mit den von uns vorgenommenen farblichen Hervorhebung wie folgt dienen:

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Regelglied = Schalter S1 geschlossen

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36. Wie ohne Weiteres zu erkennen ist, führt der hier geschlossene Schalter (S1) zunächst dazu, dass der Ausgang (grüner Punkt) des Eingangsstromverstärkers (grün gestrichelte Linie) und der Eingang (blauer Punkt) der gesteuerten Stromquelle (blaue Linie) der Einstellungsschaltung (orange gestrichelte Linie) verbunden sind (Merkmal 1.3.1 des Anspruchs 1 des Klagepatents).
37. Da zudem gemäß Merkmal 1.2 des Anspruchs 1 des Klagepatents auch der Ausgang (roter Punkt) der gesteuerten Stromquelle mit dem Eingangsstromverstärker verbunden ist, entsteht in dem Zustand „Schalter S1 zu“ ein Regelkreis (gelb). In diesem wirkt die gesteuerte Stromquelle als Regelglied des Regelkreises, indem sie den Ausgangsstrom (I1) (roter Pfeil) zur Regelung des Offsets auf ein Minimum einrichten kann (Merkmal 1.4 des Anspruchs 1 des Klagepatents).

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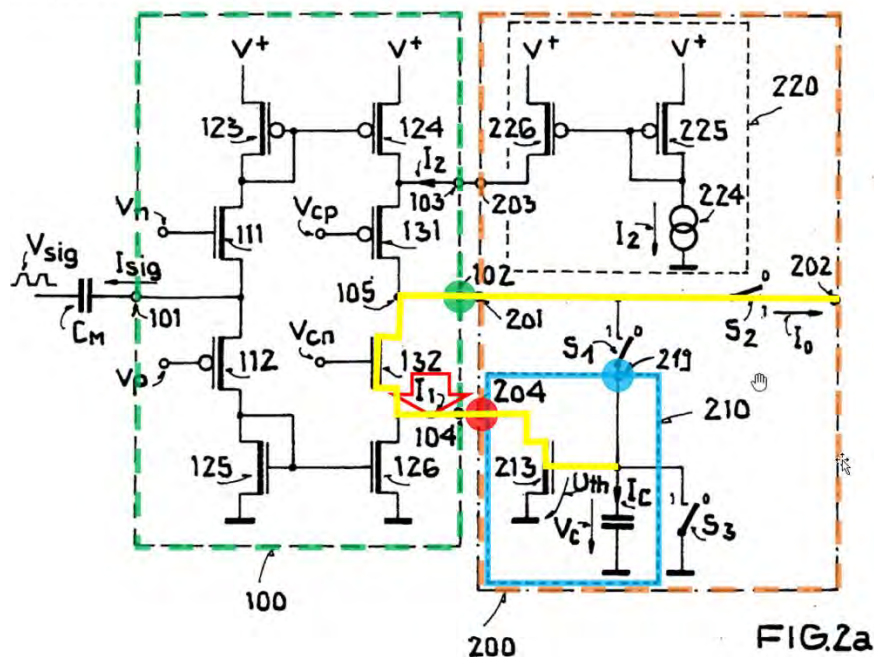
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38. Der Offset (infolge der oben beschriebenen Differenz der Stromspiegel) soll also möglichst ausgeglichen bzw. korrigiert werden. Eine vollständige Korrektur des Offsets ist, wie dem Wortlaut „auf ein Minimum“ zu entnehmen ist, nicht erforderlich. Der Begriff „Minimum“ meint hier lediglich, dass der Ausgangstrom ein im Wesentlichen konstanten Zustand erreichen soll, der idealer-, aber nicht erforderlicherweise, Null sein kann (vgl. Abs. [0013] des Klagepatents).
39. Wie die Einstellung im Regelkreis technisch funktioniert, ist nicht Gegenstand des geltend gemachten Anspruchs 1 des Klagepatents. Eine Möglichkeit ist jedoch als bevorzugtes Ausführungsbeispiel im Klagepatent beschrieben (vgl. etwa Abs. [0054] ff. des Klagepatents).
40. Das **Halteglied** im Sinne der **Merkmale 1.3.2 und 1.5** des Anspruchs 1 des Klagepatents wird demgegenüber gebildet, wenn der Schalter S1 geöffnet ist. Dann ist nämlich, wie von Merkmal 1.3.2 des Anspruchs 1 des Klagepatents vorgesehen, der Eingang (blauer Punkt) der gesteuerten Stromquelle (blaue Linie) vom Ausgang (grüner Punkt) des Eingangsstromverstärkers (grün gestrichelte Linie) getrennt. Dies sei wie folgt verdeutlicht:

Halteglied = Schalter S1 geöffnet



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41. Es kommt in dieser Situation demnach nicht mehr dazu, dass der Ausgangsstrom (Io) des Eingangsstromverstärkers in den Regelkreis eingeführt wird, sondern die eingestellte Regelung bzw. Korrektur wird nun beibehalten (deshalb Halteglied).
42. Das Klagepatent beschränkt sich auch hier nicht auf eine spezifische Art des Haltens. Für das allgemeine Verständnis mag jedoch hilfreich sein, dass das Klagepatent als Beispiel beschreib, dass im Regelbetrieb eine Kapazität geladen wird, deren Spannung dann im Haltebetrieb den Offsetstrom I1 steuert.
43. Wie Abs. [0014] des Klagepatents genauer erklärt, hält die gesteuerte Stromquelle den Ausgangsstrom „*zumindest für die Dauer einer Verstärkung von Eingangssignalen des Eingangsstromverstärkers im Wesentlichen konstant*“. Danach können „Regeln“ und „Halten“ erneut ablaufen. Für die Verwirklichung des Klagepatents genügt allerdings schon der einmalige Ablauf der beiden Zustände.
44. Mit Blick auf den vorstehenden Tatsachenvortrag bieten wir vorsorglich an:

Beweis: Sachverständigengutachten

b) Anspruch 13

45. Anspruch 13 des Klagepatents ist ein zu Anspruch 1 komplementärer Verfahrensanspruch, dessen Gegenstand ohne Weiteres aus den vorstehenden Ausführungen verständlich wird. Insoweit verweisen wir nach oben.

III. Verletzungshandlungen und Verletzungsform

46. Die Beklagte bietet an, bewirbt und vertreibt in der Bundesrepublik Deutschland Fahrzeuge, die mit einer sogenannten „*Plug-In-Hybrid-Technologie*“ ausgestattet sind. In solchen Fahrzeugen ist insbesondere eine nachfolgend näher spezifizierte sog. „*E-Maschinen-Elektronik*“, die für die Verwirklichung der Lehre des Klagepatents von zentraler Bedeutung ist, verbaut. Derart ausgestattete Fahrzeuge werden nachfolgend auch als **Verletzungsform** bezeichnet.

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47. Die Plug-In-Hybrid-Technologie, oder auch „PHEV-Technologie“ („PHEV“ steht für „Plug-In Hybrid Electric Vehicle“) zeichnet sich für das vorliegende Verfahren ersichtlich dadurch aus, dass mittels dieser Technologie betriebene Fahrzeuge sowohl über einen Benzinmotor, als auch einen Elektromotor (auch „E-Maschine“ genannt) nebst Elektronik-Komponente (E-Maschinen-Elektronik) sowie eine Hochvoltbatterie verfügen. Die gemeinsame Nutzung dieser Komponenten ermöglicht die Reduzierung des Kraftstoffverbrauchs und der CO₂-Emissionen des Fahrzeuges. Bei nicht ausreichender Akkuladung oder -kapazität des Elektromotors wird der Verbrennungsmotor automatisch bedarfsgerecht dazugeschaltet.
48. Die E-Maschinen-Elektronik (auch „Leistungselektronik“) birgt die zentrale Intelligenz des Antriebssystems von Plug-In-Hybrid-Fahrzeugen, indem sie den Elektromotor steuert und dessen Verbindung zur Hochvolt-Batterie herstellt.
49. Eine Erläuterung der Technologie, abrufbar auf einer Internetseite der Beklagten unter dem Link <https://www.bmw.de/de/topics/faszination-bmw/elektromobilitaet/plug-in-hybride.html> (zuletzt besucht am 27. Dezember 2021) überreichen wir als

Anlage K 4.

50. Ein Fahrzeugbeispiel, welches die PHEV-Technologie und damit eine entsprechende E-Maschinen-Elektronik aufweist, ist das Modell „BMW 530e Limousine“.
51. Ein solches Fahrzeug wurde von der Beklagten u.a. am 27. Dezember 2021 entsprechend beworben und zum Verkauf für einen Gesamtpreis von EUR 57.800,00 angeboten. Dieses deutschsprachige Angebot, abgerufen auf der deutschsprachigen Internetseite der Beklagten www.bmw.de unter dem Link https://configure.bmw.de/de_DE/configure/G30/11AG/FBYAT,P0668,S01CB,S01CX,S01DF,S0205,S0230,S023F,S0255,S02PA,S02VB,S0302,S0423,S0428,S0465,S04K8,S04NE,S04T1,S04U9,S0508,S0534,S0548,S05AV,S0654,S06AC,S06AE,S06AK,S06C4,S06U3,S06WD,S0801,S0851,S0879,S08KA,S08R9,S08TF,S09QX/SE000034?expanded=true (zuletzt besucht am 27. Dezember 2021), überreichen wir als

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Anlage K 5.

52. Für dieses Angebot zeichnet sich die Beklagte verantwortlich. Dies ergibt sich aus dem zugehörigen Impressum gemäß

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Anlage K 6.

53. Die in solchen Fahrzeugen verbaute und für die Patentverletzung bedeutsame E-Maschinen-Elektronik ist in einem Gehäuse enthalten welches wie folgt aussieht:

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54. Auf dem auf der Seite aufgeklebten Sticker ist unter anderem die Bezeichnung „BMW“ zu erkennen. Die Modellbezeichnung lautet „LEB450D“. Dies ist auf den nachfolgend eingefügten vergrößerten Ausschnitten gut zu erkennen:



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55. Für die Verwirklichung der Lehre des Klagepatents von besonderer Bedeutung ist ein auf der Platine der E-Maschinen-Elektronik verbauter sog. „*Bidirectional, Zero Drift, Current Sense Amplifier*“ mit der Kennung „AD8418“ (nachfolgend nur noch als „AD8418“ bezeichnet).
56. Wie sich dem als

Anlage K 7

überreichten Datenblatt, dort S. 16, entnehmen lässt, lautet das „*Branding*“, also die auf der Außenseite des Bauteils erkennbare Bezeichnung des AD8418 „Y4N“ bzw. „Y4M“:

ORDERING GUIDE				
Model ^{1, 2}	Temperature Range	Package Description	Package Option	Branding
AD8418BRMZ	−40°C to +125°C	8-Lead MSOP	RM-8	Y4N
AD8418BRMZ-RL	−40°C to +125°C	8-Lead MSOP, 13" Tape and Reel	RM-8	Y4N
AD8418WBRMZ	−40°C to +125°C	8-Lead MSOP	RM-8	Y4M
AD8418WBRMZ-RL	−40°C to +125°C	8-Lead MSOP, 13" Tape and Reel	RM-8	Y4M
AD8418WBRZ	−40°C to +125°C	8-Lead SOIC_N	R-8	
AD8418WBRZ-RL	−40°C to +125°C	8-Lead SOIC_N, 13" Tape and Reel	R-8	

Bild 1: Draufsicht nach Entfernung der Außenverkleidung

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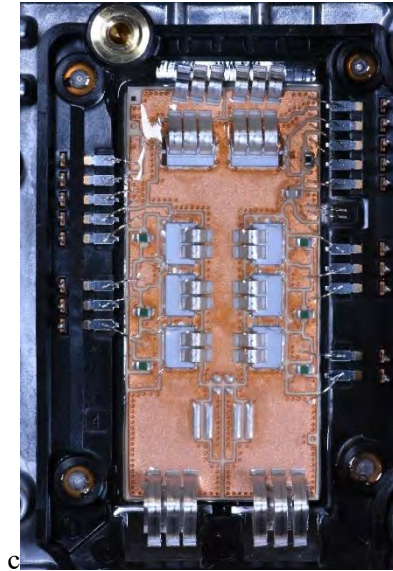


Bild 2: Unterseite der Platine mit Hervorhebung des AD8418



Bild 3: Vergrößerter Bildausschnitt - AD8418

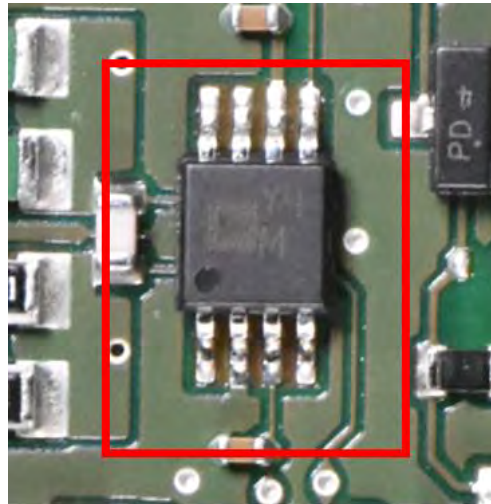
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57. Für den Vortrag, dass es sich bei dem oben gezeigten Bauteil mit dem Branding „Y4M“ um den angegriffenen AD8418 handelt, bieten wir vorsorglich an

Beweis: Sachverständigengutachten.

Für den Vortrag, dass dieser in den besagten E-Maschinen-Elektroniken in Plug-In-Hybrid-Fahrzeugen der Beklagten verbaut ist, bieten wir vorsorglich an

Beweis: Zeugnis des Herrn Oliver Zipse (Mitglied des Vorstandes), zu laden über die Beklagte.

58. Die im AD8418 vorliegende Schaltungsanordnung bzw. Struktur ist nachfolgend schematisch gezeigt:

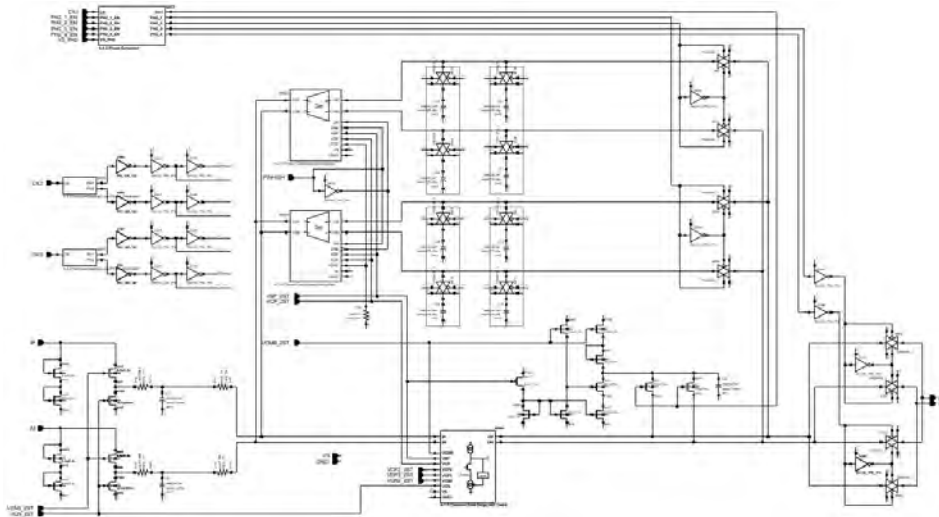
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59. Diese Abbildung, die wir als

Anlage K 8

überreichen, beruht auf einem Teardown des Modells „AD8417“. Der in der Verletzungsform verbaute AD8418 weist dieselbe Struktur auf und unterscheidet sich auch im Hinblick auf die Funktionszusammenhänge innerhalb dieser Schaltungsanordnung nicht.

Beweis: Sachverständigengutachten.

60. Dies zeigt ein Vergleich mit dem entsprechenden Datenblatt des AD8417, welches wir überreichen als

Anlage K 9.

61. Sämtliche für die hier relevante Offset-Korrektur relevanten, auf der ersten Seite des Datenblatts angeführten, „Features“ stimmen mit denjenigen auf Seite 1 des AD8418-Datenblatts überein. Gleiches gilt für die „General Description“ und schließlich stimmt auch die Struktur der Abbildung „Typical Application Circuit“ mit der entsprechenden Abbildung auf Seite 1 des AD8418-Datenblatts überein. Insoweit zeigt die Abbildung gemäß **Anlage K 8** also gleichermaßen die Schaltungsanordnung des AD8418.

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Beweis: Sachverständigengutachten.

62. Auf die Einzelheiten kommen wir im Rahmen der nachfolgenden Verletzungssubsumtion zurück.

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IV. Verwirklichung

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1. Anspruch 1

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63. Die Verletzungsform macht von der Lehre des Anspruchs 1 des Klagepatents unmittelbar wortsinngemäß Gebrauch.

a) Verwirklichung von Merkmal 1

Schaltung mit einem Eingangsstromverstärker (100) und einer Einstellungsschaltung (200) zur Korrektur eines Offsets (I_{off}) eines Ausgangsstroms (I_o) des Eingangsstromverstärkers (100) (Merkmal 1).

64. Die Verletzungsform stellt eine Schaltung mit einem Eingangsstromverstärker und einer Einstellungsschaltung zur Korrektur eines Offsets eines Ausgangsstroms des Eingangsstromverstärkers bereit.
65. Wie die obige Abbildung gemäß **Anlage K 8** erkennen lässt, weist die Verletzungsform eine komplexe Schaltungsanordnung auf. Diese enthält insbesondere mehrere Verstärkerbereiche und auch mehrere patentgemäße Einstellungsschaltungen. Der besseren Nachvollziehbarkeit halber, haben wir in der nachfolgenden Abbildungen Teile der Schaltungsanordnung ausgeblendet, die für das Verständnis der Verwirklichung keine oder nur eine untergeordnete Rolle spielen. Auf das Wesentliche reduziert sieht der Schaltplan wie folgt aus:

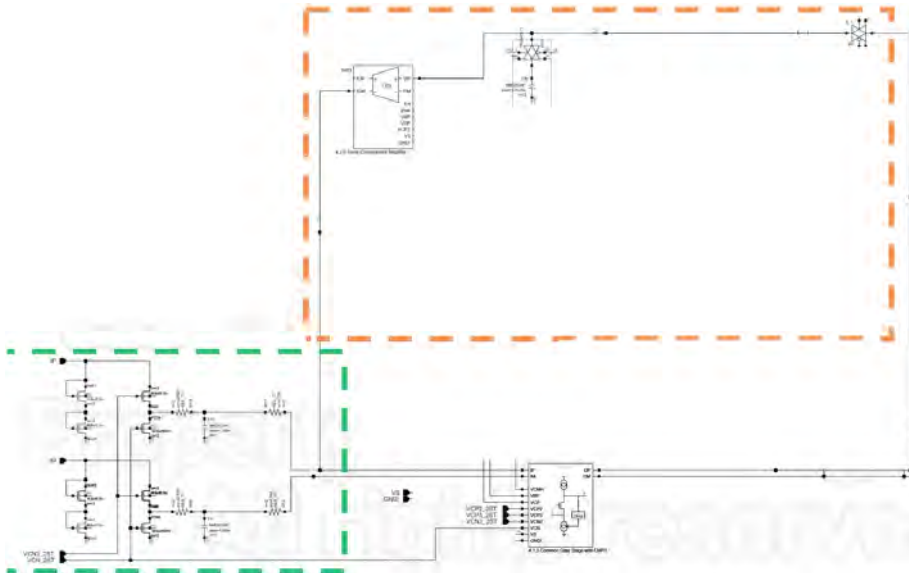
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66. Wie sich dieser Abbildung entnehmen lässt, enthält die Verletzungsform zwei kaskodierte Transconductanz-Verstärkerstufen, in denen eine Verstärkung stattfindet. Diese Verstärkerstufen befinden sich in der grün gestrichelten Box, wobei zum Zwecke der Übersichtlichkeit nicht alle Komponenten dargestellt sind. Die Schaltung enthält somit einen Bereich in, welchem ein Eingangsstrom verstärkt wird, der mit einem Offset überlagert sein kann, mithin einen patentgemäßen Eingangsstromverstärker.
67. Zudem liegt eine Einstellungsschaltung zur Korrektur eines Offsets eines Ausgangsstroms des Eingangsstromverstärkers innerhalb der orange-gestrichelten Linie vor. Dies wird im Rahmen der Ausführungen zu den weiteren Merkmalen deutlich werden.
68. Dass in der Verletzungsform ein unerwünschter Offset auftreten kann, ist wie in den Ausführungen zum technischen Hintergrund und Stand der Technik erläutert, auf allgemeine Prozessabweichungen/-schwankungen bei Herstellung entsprechender Bauteile zurückzuführen.
69. Damit ist Merkmal 1 des Anspruchs 1 des Klagepatents verwirklicht.

Beweis: Sachverständigengutachten

AMPERSAND

b) Verwirklichung von Merkmal 1.1

- bei der die Einstellungsschaltung (200) eine gesteuerte Stromquelle (210) aufweist, (Merkmal 1.1).

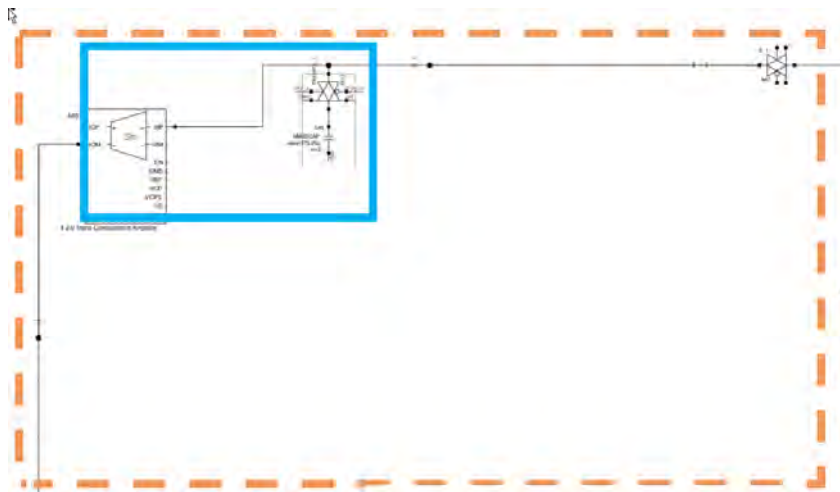
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70. In der gezeigten Schaltungsanordnung der Verletzungsform weist die Einstellungsschaltung auch eine gesteuerte Stromquelle auf. Der Bereich, in welchem sich die gesteuerte Stromquelle befindet, ist im nachfolgenden Ausschnitt des Bereichs der Einstellungsschaltung blau umrandet:

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71. Genau wie in der bevorzugten Ausführungsform nach Fig. 2a des Streitpatents ist ein Kondensator (hier mit „C45“ bezeichnet) vorgesehen, der eine Spannung speichern und an einen Eingang eines Verstärkers anlegen kann (durch das mit „Gm“ bezeichnete trapezförmige Element symbolisiert). Der Verstärker gibt in Abhängigkeit von der Spannung des Kondensators C45 einen Strom aus, der Strom wird also durch die Spannung gesteuert.
72. Damit ist Merkmal 1.1 des Anspruchs 1 des Klagepatents verwirklicht.

Beweis: Sachverständigengutachten

AMPERSAND

c) Verwirklichung von Merkmal 1.2

- bei der ein Ausgang (204) der gesteuerten Stromquelle (210) mit dem Eingangsstromverstärker (100) zur Einprägung eines Ausgangsstromes (I1) der gesteuerten Stromquelle (210) in den Eingangsstromverstärker (100) verbunden ist, (Merkmal 1.2).

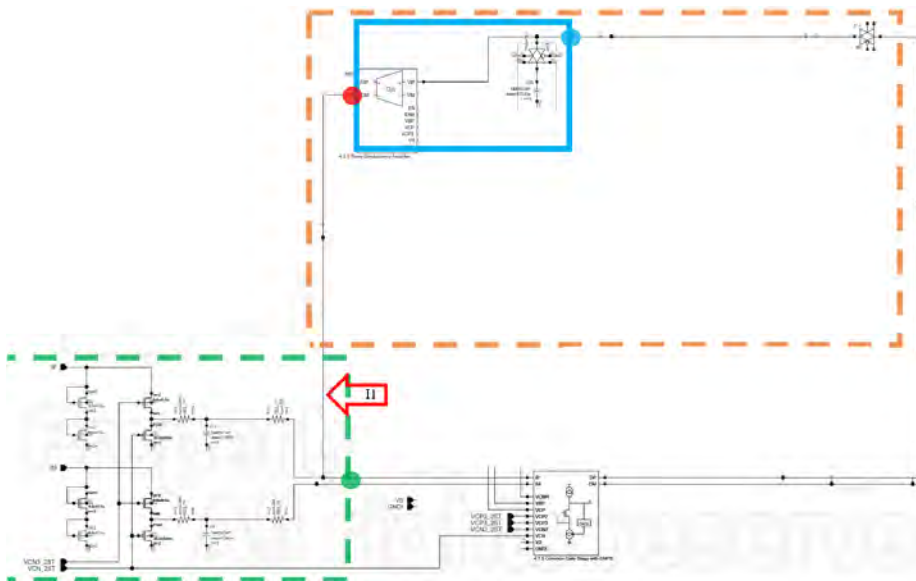
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73. Wie nachfolgend veranschaulicht, ist in der gezeigten Schaltungsanordnung der Verletzungsform auch der Ausgang (roter Punkt) der gesteuerten Stromquelle mit dem Eingangsstromverstärker zur Einprägung eines Ausgangsstroms (I1) (roter Pfeil) der gesteuerten Stromquelle in den Eingangsstromverstärker verbunden. Diese Verbindung erfolgt durch eine einfache Leitung (d.h. direkt). Die nach unten gezeichnete Leitung vom Ausgang der gesteuerten Stromquelle trifft in dem Eingangsstromverstärker auf eine horizontal gezeichnete Leitung und ist an dieser angeschlossen (symbolisiert durch einen schwarzen Punkt):



74. Diese direkte Verbindung führt zwangsläufig dazu, dass der Ausgangsstrom der gesteuerten Stromquelle in die unten im Schaltplan gezeichnete Leitung des Eingangsstromverstärkers hineinfließt (der Strom kann natürlich auch in die andere Richtung fließen). Der Strom kann schlicht nichts anderes tun, als dem leitfähigen Pfad zu folgen. Er wird dem (Ausgang der) Eingangsstromverstärker aufgeprägt; Merkmal 1.2 des Anspruchs 1 des Klagepatents ist damit verwirklicht.

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75. Vor diesem Hintergrund ist Merkmal 1.2 ist verwirklicht.

Beweis: Sachverständigengutachten

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- d) **Verwirklichung der Merkmalsgruppe 1.3 in Verbindung mit Merkmal 1.4: Regelglied**

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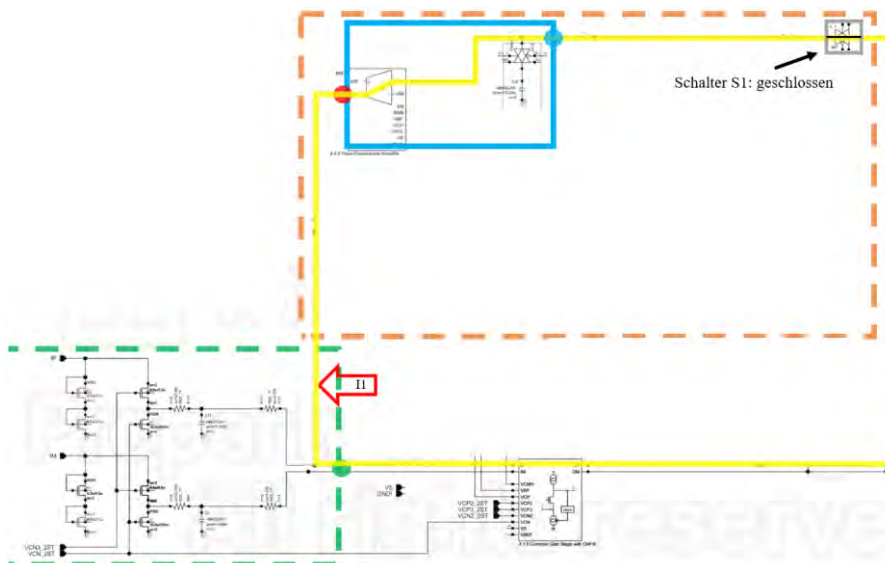
- bei der ein Eingang (219) der gesteuerten Stromquelle (210)

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zur Bildung eines Regelglieds eines Regelkreises durch eine erste Schaltvorrichtung (S1) der Einstellungsschaltung (200) mit dem Ausgang (102) des Eingangsstromverstärkers (100) verbunden ist (Merkmalsgruppe 1.3)

- bei der die als Regelglied wirkende gesteuerte Stromquelle (210) durch Bereitstellung eines Stromwertes des Ausgangsstroms (II) zur Regelung des Offsets (I_{off}) auf ein Minimum eingerichtet ist, und (Merkmal 1.4).

76. Wie nachfolgend veranschaulicht, verhält es sich bei der gezeigten Schaltungsanordnung der Verletzungsform so, dass in der Situation eines geschlossenen Schalters S1 (grau umrandet) der Eingang (blauer Punkt) der gesteuerten Stromquelle mit dem Ausgang (grüner Punkt) des Eingangsstromverstärkers verbunden ist:



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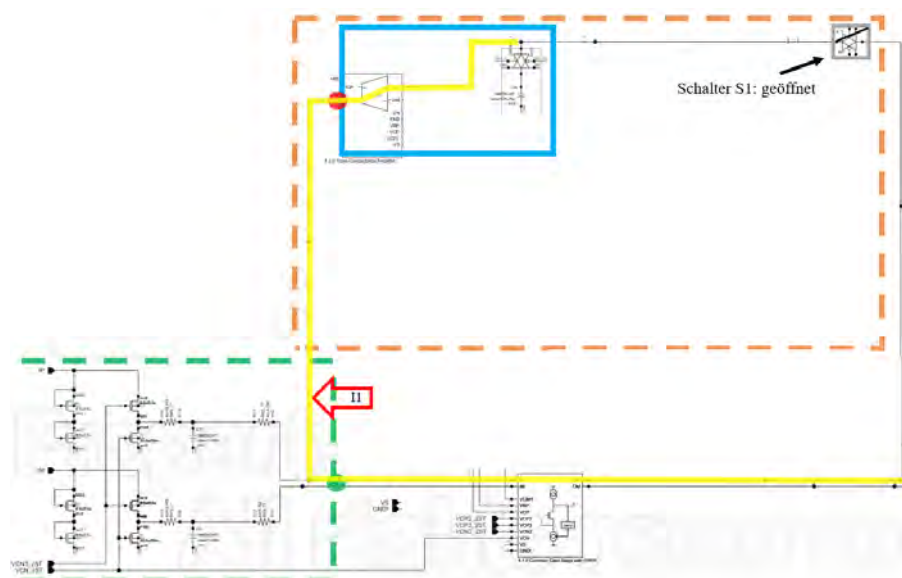
77. Infolge dieser Verbindung entsteht wiederum ein Regelkreis (gelb), in welchem die gesteuerte Stromquelle entsprechend als Regelglied wirkt, indem sie durch Bereitstellung eines Ausgangsstroms (I1) (roter Pfeil) zur Regelung eines Offsets auf ein Minimum eingerichtet ist.
78. Vor diesem Hintergrund ist die Merkmalsgruppe 1.3 in Verbindung mit Merkmal 1.4 des Anspruchs 1 des Klagepatents ebenfalls verwirklicht.

Beweis: Sachverständigengutachten

e) **Verwirklichung der Merkmalsgruppe 1.3 in Verbindung mit Merkmal 1.5: Halteglied**

- bei der die als Halteglied wirkende gesteuerte Stromquelle (210) zum Halten des zum Minimum zugehörigen Stromwertes des Ausgangsstroms (I1) eingerichtet ist (Merkmal 1.5).

79. Wenn die gewünschte Regelung auf ein Minimum erfolgt ist, wechselt die gezeigte Schaltungsanordnung der Verletzungsform in einen patentgemäßen „Haltezustand“ infolge der Öffnung des Schalters S1. Dies lässt sich wie folgt veranschaulichen:



80. Nunmehr ist der Eingang der gesteuerten Stromquelle (blauer Punkt) also durch die (geöffnete) Schaltvorrichtung S1 von dem Ausgang des Eingangsstromverstärkers getrennt. Der Regelkreis ist also unterbrochen.

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81. In dieser Situation wirkt die gesteuerte Stromquelle als Halteglied, indem sie zum Halten des zum Minimum zugehörigen Stromwertes des Ausgangsstroms (I1) eingerichtet ist.

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82. Der Spannungswert auf dem Kondensator C45 bleibt in diesem Zustand erhalten. Damit gibt – wie oben erläutert – der Verstärker („Gm“) der gesteuerten Stromquelle weiterhin den eingestellten Strom aus. Dieser wird – wie ebenfalls oben beschrieben – über die vom Ausgang des Verstärkers („Gm“) der gesteuerten Stromquelle nach unten gezeichnete Leitung dem Ausgang des Eingangsstromverstärkers zugeführt.

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83. Vor diesem Hintergrund sind Merkmalsgruppe 1.3 des Anspruchs 1 des Klagepatents in Verbindung mit Merkmal 1.5 des Anspruchs 1 des Klagepatents ebenfalls verwirklicht.

Beweis: Sachverständigengutachten

f) Zwischenergebnis

84. Die Verletzungsform macht mithin von sämtlichen Merkmalen des Anspruchs 1 des Klagepatents unmittelbar wortsinngemäß Gebrauch.
85. Die im Rahmen der Verletzungssubsumtion verwendeten Abbildungen überreichen wir gesammelt im DIN-A4-Format als

Anlage K 10.

86. Zudem stellen wir diese Abbildungen der Kammer auch als physische Ausdrücke in Farbe im DIN-A3-Format zur Verfügung. Selbige stellen wir auf Anfrage auch gerne der Beklagten zur Verfügung.

2. Anspruch 13

87. Aus den vorstehenden Ausführungen ergibt sich gleichsam die unmittelbare wortsinngemäße Verwirklichung der Merkmale des Verfahrensanspruchs 13.

Beweis: Sachverständigengutachten

AMPERSAND

B. Zum Rechtlichen

88. Der geltend gemachte Unterlassungsanspruch folgt aus §§ 139 Abs. 1, 9 S. 2 Nr. 1 PatG. Die Beklagte macht durch das Anbieten der Verletzungsformen in der Bundesrepublik Deutschland von der technischen Lehre des Klagepatents wortsinngemäß Gebrauch. Weiter begründet das Angebot durch die Beklagte eine Begehungsfahr auch für das Inverkehrbringen, Gebrauchen, Besitzen und Einführen, sodass der dahingehender Unterlassungsanspruch ebenfalls gerechtfertigt ist (OLG Karlsruhe, Urteil vom 14.01.2009, 6 U 54/06, InstGE 11, 15, Rn. 151 – „SMD-Widerstand“, OLG Düsseldorf, Urteil vom 06.04.2017 – I-2 U 51/16).
89. Die Klägerin hat gegen die Beklagte dem Grunde nach einen Anspruch auf Zahlung von Schadensersatz, der aus § 139 Abs. 2 PatG resultiert. Als Fachunternehmen hätte es der Beklagten obliegen, zu prüfen, ob die angebotenen Produkte patentverletzend sind. Indem sie die entsprechende Prüfung unterließ, hat die Beklagte die im Verkehr erforderliche Sorgfalt missachtet, § 276 Abs. 2 BGB. Durch die rechtsverletzende Handlung der Beklagten ist die Entstehung eines Schadens hinreichend wahrscheinlich. Da die Klägerin diesen jedoch noch nicht beziffern kann, weil sie den Umfang der rechtsverletzenden Benutzungshandlungen ohne ihr Verschulden nicht im Einzelnen kennt, ist ein rechtliches Interesse der Klägerin an der Feststellung der Schadensersatzpflicht im Sinne von § 256 Abs. 1 ZPO gegeben.
90. Die Beklagte hat der Klägerin darüber hinaus eine angemessene Entschädigung gem. § 33 PatG zu zahlen.
91. Damit die Klägerin in die Lage versetzt wird, den Schadensersatz zu beziffern, steht ihr gegen die Beklagte ein Anspruch auf Auskunft zu. Der Anspruch auf Auskunft über die Herkunft und den Vertriebsweg der Verletzungsformen ergibt sich aufgrund der unberechtigten Benutzung des Erfindungsgegenstands unmittelbar aus § 140 b Abs. 1 PatG, der Umfang der Auskunftspflicht aus § 140 b Abs. 3 PatG. Die Rechnungslegungspflicht folgt aus §§ 242, 259 BGB. Die Klägerin ist auf die Angaben angewiesen, über die sie ohne eigenes Verschulden nicht verfügt, um den ihr zustehenden Entschädigungs- und Schadensersatzanspruch geltend zu machen; die Beklagte wird durch die von ihr verlangten Auskünfte nicht unzumutbar belastet. Für nicht

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A M P E R S A N D

gewerbliche Abnehmer und die Angebotsempfänger ist der Beklagten ein Wirtschaftsprüfervorbehalt eingeräumt.

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92. Der Anspruch auf Vernichtung folgt aus § 140 a Abs. 1 S. 1 PatG und Beseitigung aus den Vertriebswegen folgt aus § 140 a Abs. 3 PatG.

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93. Die örtliche Zuständigkeit des Landgerichts München I folgt aus dem Umstand, dass die Beklagte die Verletzungsformen im gesamten Gebiet der Bundesrepublik Deutschland auf ihrer Website angeboten hat, § 32 ZPO. Die sachliche Zuständigkeit des Landgerichts München I folgt aus § 143 Abs. 1 PatG.

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(digital signiert)

Hosea Haag

Rechtsanwalt

Exhibit 10

Exhibit 10

[Translation]

AMPERSAND Partnerschaft von Rechtsanwälten mbB
Widenmayerstraße 4 • 80538 Munich, Germany

Regional Court of Munich I
Prielmayerstraße 7
80335 München

via special electronic mailbox for attorneys

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DATE	OUR REF.
January 11, 2022	16/16-20.497-DE‘504

Complaint

In the matter of

Arigna Technology Ltd.,

Gerald Padian, Suite 23, The Hyde Building Carrickmines, Dublin 18, Ireland,
represented by the Directors Ciaran O’Gara, Sean O’Sullivan und Gerald Padian

– Plaintiff –

Attorneys of record:

AMPERSAND
Partnerschaft von Rechtsanwälten mbB,
Widenmayerstraße 4, 80538 Munich, Germany

v e r s u s

Bayerische Motoren Werke AG,

Pertuelring 130, 80809 Munich, Germany,
represented by the Board of Directors Oliver Zipse, Ilka Horstmeier, Milan Nedeljkovic, Pieter Nota,
Nicolas Peter, Frank Weber and Andreas Wendt

– Defendant –

for

patent infringement

Value in dispute (preliminary estimate):EUR 1 million

in the name and by authority of the Plaintiff, we file a

Complaint

and, **request** that it be found as follows:

I. The Defendants be ordered,

- 1. in order to avoid a fine for contempt of court of up to EUR 250,000.00 to be determined by the court for each case of contravention, alternatively imprisonment for contempt of court of up to six months or of up to two years in case of repeated contravention, the imprisonment for contempt of court be enforced against the Board of Directors or the managing directors of the Defendants, to refrain from**

offering, putting into circulation, using, or importing or possessing for the purposes mentioned, or supporting third parties in such acts, within the Federal Republic of Germany,

a circuit comprising an input current amplifier (100) and an adjusting circuit (200) configured to correct an offset (I_{off}) of an output current (I_o) of the input current amplifier (100),

- the adjusting circuit (200) having a controlled current source (210),**
- wherein an output (204) of the controlled current source (210) is connected to the input current amplifier (100) for impressing an output current (I_1) of the controlled current source (210) in the input current amplifier (100),**
- wherein an input (219) of the controlled current source (210) is connected by a first switching device (S1) of the adjusting circuit (200) to the output (102) of the input current amplifier (100) to form a regulation element of a control loop, and is**

disconnected from the output (102) of the input current amplifier (100) by the first switching device (S1) to form a holding element,

- wherein the controlled current source (210), acting as a regulation element, is configured to regulate the offset (I_{off}) to a minimum by providing a current value of the output current (I_1), and
- wherein the controlled current source (210), acting as a holding element, is configured to hold the current value, associated with the minimum, of the output current (I_1).

(Claim 1 of DE 10 2009 060 504)

2. offering or delivering in the Federal Republic of Germany for use in the Federal Republic of Germany, or supporting third parties in such acts,

circuits suitable for carrying out a method for correcting an offset (I_{off}) of an output current (I_c) of an input current amplifier (100) of a circuit, the method comprising

- connecting a controlled current source (210) to an output (102) of the input current amplifier (100) via a first switching device (S1), to form a regulation element of a control loop;
- regulating an offset (I_{off}) to a minimum by providing a current value of the output current (I_1) of the controlled current source (210) when an input signal (I_{sig}) of the input current amplifier (100) has a constant value, the controlled current source acting as the regulation element,
- disconnecting the controlled current source (210) from the output (102) of the input current amplifier (100) by the first switching device (S1) to form a holding element with the current value associated with the minimum of the output current (I_1).

(Claim 13 of DE 10 2009 060 504)

3. to provide information to the Plaintiff to the extent to which they have committed the acts specified in item I. 1. and I.2. since July 4, 2014, specifying

- a) the names and addresses of the manufacturers, distributors and other previous owners,
- b) the names and addresses of the commercial customers as well as the points of sale for which the products were intended,
- c) the amount of delivered, received or ordered products as well as the prices paid for the corresponding products,

with the information owed under I. 3. a) and I. 3. b) comprising any and all deliveries to the relevant customer, irrespective of whether or not the specific delivery was put into circulation by that customer in the territory of the Federal Republic of Germany;

with copies of the corresponding proofs of purchase (i.e. invoices or, alternatively, delivery notes) are to be presented as evidence;

it being allowed for confidential details, apart from the data for which information has to be provided, to be redacted;

4. to render accounts to the Plaintiff to the extent to which it committed the acts specified in item I. 1 and I. 2. since August 3, 2014, specifying

- a) the individual deliveries, itemized by quantities, times and prices of delivery (and the respective type designations) as well as names and addresses of the customers,
- b) the individual offers, itemized by quantity, times and prices of supply (and the respective type designations) as well as the names and addresses of the offerees,
- c) the advertising posted, itemized by the advertising media, its circulation, the period and area of distribution, and in case of Internet advertising by the domain (URL), access figures and advertising periods of each campaign,
- d) the production costs, itemized by the individual cost factors, and the profit made,

with the information owed under I. 4. a) comprising any and all deliveries to the relevant customer, irrespective of whether or not a specific delivery was put into circulation by that customer in the territory of the Federal Republic of Germany,

with the Defendants being allowed to submit the names and addresses of the non-commercial customers and offerees, instead of to the Plaintiff, to a certified auditor resident in the Federal Republic of Germany, to be named by the Plaintiff, who is sworn to secrecy towards the latter, provided that the Defendants bear their costs and authorize and oblige them to disclose to the Plaintiff upon specific inquiry whether a specified customer or offeree is included in the list.

II. The Defendants are ordered to recall the products specified in item I. 1. and I. 2., which have been put into circulation since July 4, 2014, from the commercial customers, indicating the patent-infringing state of the products determined by the Court (judgment of the Regional Court of Munich I dated [...]), with the binding assurance to refund any payments and bear necessary packing and transport costs as well as customs and storage costs related to the return, and to resume possession of these products.

III. It shall be determined

1. that the Defendants are under an obligation to pay appropriate damages to the Plaintiff for the acts specified in item I. 1. and I. 2., committed in the period from July 30, 2011 until August 2, 2014;
2. that the Defendants are under an obligation to compensate the Plaintiff for any damage incurred by Atmel Corp. during the period from August 3, 2014 to December 20, 2019, and by Sonraí Memory Ltd. during the period from December 21, 2019 to February 25, 2020, and which have been or will be incurred by the Plaintiff since February 26, 2020, as a result of the acts specified in item I.1. and I.2. above.

IV. The Defendants shall bear the costs of the legal dispute.

V. The judgment is provisionally enforceable, if necessary against provision of security; the Plaintiff requests that the following partial securities be set:

Demands for relief I.1. and I.2. (discontinuance)	EUR 750,000.00
Demand for relief 1.2. [<i>sic</i>] (information)	EUR 50,000.00
Demand for relief I.3. (Rendering of accounts)	EUR 100,000.00
Demand for relief II. (recall)	EUR 50,000.00
Demand for relief III. (destruction)	EUR 50,000.00

in the alternative,

the Plaintiff be granted the right to avert enforcement proceedings due to costs by provision of security (bank guarantee or savings bank guarantee).

Insofar as the Defendants recognize the claim or should the Defendants not indicate their willingness to defend in due time contrary to Sec. 276 German Code of Civil Procedure (*ZPO*), it is requested now already:

that a judgment by confession or default judgment be rendered against the Defendants in written proceedings.

Reasoning:

A. Regarding the facts

I. The Parties

1. The Plaintiff is active in the field of monetization of patents and has its place of business in Dublin. In this regard, the spectrum of services ranges from patent examination, selection, preparation and evaluation to market studies, teardowns and acquisition financing to licensing and judicial enforcement of corresponding intellectual property rights.
2. The Defendant is a listed automobile manufacturer based in Munich and is known to the court.

II. Regarding the patent-in-suit

1. Formalities

3. The patent-in-suit, entitled “*Schaltung und Verfahren zur Einstellung eines Offset-Ausgangsstroms für einen Eingangsstromverstärker*” (“*Circuit and method for adjusting an offset output current for an input current amplifier*”) having the publication number DE 10 2009 060 504 B4, was applied for on December 23, 2009 without claiming a priority. The application of the patent-in-suit was disclosed on June 30, 2011. The patent grant was published on July 3, 2014. We submit a copy of the specification of the patent-in-suit as

Exhibit K 1.

4. The patent-in-suit is in force. We submit a current excerpt from the online register of the German Patent and Trademark Office as

Exhibit K 2.

5. Atmel Automotive GmbH, with its place of business in Heilbronn, Germany, was the original proprietor of the patent-in-suit. It assigned the patent-in-suit together with all claims for patent infringement in the past and associated additional claims to Atmel Corp., having its place of business in San Jose, USA, by means of the patent assignment agreement dated December 31, 2010, which brought the patent to grant on July 3, 2014.
6. Atmel Corp. then assigned the patent-in-suit together with all claims for patent infringement in the past and associated additional claims to Sonraí Memory Limited, having its place of business in Dublin, Ireland, by means of the patent assignment agreement dated December 20, 2019.
7. Finally, the latter assigned the patent-in-suit together with all claims for patent infringement in the past and associated additional claims to the Plaintiff by means of the patent assignment agreement dated February 25, 2020, and the Plaintiff is now shown in the register as the proprietor.

2. Regarding the prior art and the technical background

8. The invention in accordance with the patent-in-suit relates to a circuit and method for setting an offset output current for an input current amplifier (paragraph [0001] of the patent-in-suit).

9. According to the statements in paragraph [0002] of the patent-in-suit, current amplifiers were known to the person skilled in the art at the application date, for example so-called “*CC operational amplifiers*” – abbreviated as “*CC-OPV*” in the patent-in-suit. With regard to these exemplary current amplifiers, the patent-in-suit refers to pages 563-565 of the specialist book “*Halbleiterbautechnik*” (“Semiconductor technology”) by Tietze, Schenk, 12th edition, 2002.
10. Further, the patent-in-suit states in paragraph [0003] that, at the date of filing, an AC-coupled, multi-stage operational amplifier with a high gain factor was known from the publication US 2003/210092 A1. This includes at least two amplifier stages, each having an input and an output, an AC coupling capacitor connecting the output of the first stage to the input of the second stage, and a charging circuit connected to the AC coupling capacitor and the input of the second stage to charge the AC coupling capacitor during a voltage sequencing phase and to connect the AC coupling capacitor to the input of the second stages during a hold phase to separate the bias voltages of the two stages.
11. The patent-in-suit also identifies US 5,565,813 A as part of the prior art, which discloses a similar (voltage) differential amplifier with switched capacitors (at the end of paragraph [0003] of the patent-in-suit).
12. Since the teaching of the patent-in-suit is not concerned with the construction or functionality of any compatible amplifiers, we will refrain at this point from providing more detailed explanations of the background of the amplifiers mentioned in the prior art.
13. The problem of a so-called **offset** addressed by the patent-in-suit is explained later (paragraph [0047] of the patent-in-suit) by way of example using the embodiment according to Fig. 2a. The input current amplifier shown there comprises two so-called current mirrors. The term “current mirror” indicates that an input current is replicated (mirrored) at the output. If the current intensity of the input current has a certain course, the mirrored output current should also have this course. Here, the output current can be amplified or reduced by a certain factor – the “mirror” can increase or decrease the current proportionally (like a shaving mirror). In Fig. 2a, the current mirrors are formed by the transistors 123 - 126. Ideally, the transformation ratio of both current mirrors should be exactly the same. That way, it is guaranteed that a certain input current flows at the output, if necessary with the selected amplification or reduction factor.
14. However, due to process deviations/variations in the manufacture of amplifier transistors or other influences, deviations from the ideal transformation ratio may occur in reality. The

difference can be described as an “*offset*” (current). This offset (current) superposes the desired output current at the circuit output (paragraph [0045] of the patent-in-suit). This is unfavorable because it causes the output current to deviate from the desired output current in an uncontrolled manner. It is therefore desirable to reduce the influence of the offset (current).

15. With regard to the above statement of fact, we offer as a precaution:

Evidence: Expert opinion

3. Problem and solution of the patent-in-suit

16. Against this background, the patent in suit sets itself the object of improving as far as possible a circuit with an input current amplifier and of providing as improved a method as possible for correcting an offset of an input current amplifier.
17. The patent-in-suit solves this problem by means of the features of independent claims 1 and 13 analyzed below:

Claim 1:

1. A circuit comprising an input current amplifier (100) and an adjusting circuit (200) configured to correct an offset (I_{off}) of an output current (I_o) of the input current amplifier (100),
 - 1.1. - the adjusting circuit (200) having a controlled current source (210),
 - 1.2. - wherein an output (204) of the controlled current source (210) is connected to the input current amplifier (100) for impressing an output current (I_1) of the controlled current source (210) in the input current amplifier (100),
 - 1.3. - wherein an input (219) of the controlled current source (210)
 - 1.3.1. is connected by a first switching device (S1) of the adjusting circuit (200) to the output (102) of the input current amplifier (100) to form a regulation element of a control loop,

- 1.3.2. and is disconnected from the output (102) of the input current amplifier (100) by the first switching device (S1) to form a holding element,
- 1.4. - wherein the controlled current source (210), acting as a regulation element, is configured to regulate the offset (I_{off}) to a minimum by providing a current value of the output current (I_1), and
- 1.5. - wherein the controlled current source (210), acting as a holding element, is configured to hold the current value, associated with the minimum, of the output current (I_1).

Claim 13:

- 13. A method for correcting an offset (I_{off}) of an output current (I_c) of an input current amplifier (100) of a circuit, the method comprising
 - 13.1. - connecting a controlled current source (210) to an output (102) of the input current amplifier (100) via a first switching device (S1), to form a regulation element of a control loop;
 - 13.2. - regulating an offset (I_{off}) to a minimum by providing a current value of the output current (I_1) of the controlled current source (210) when an input signal (I_{sig}) of the input current amplifier (100) has a constant value, the controlled current source acting as the regulation element,
 - 13.3. - disconnecting the controlled current source (210) from the output (102) of the input current amplifier (100) by the first switching device (S1) to form a holding element with the current value associated with the minimum of the output current (I_1).
- 18. We submit the foregoing feature analyses as

Exhibit K 3.

- 19. In feature 1.2 of claim 1 of the patent-in-suit, we changed the reference number “output (203) of the controlled current source (210)” to “output (204) of the controlled current source (210)”.

This is merely a correction of an obvious typing error. As can easily be gathered from Fig. 2a, for example, the output of the controlled current source (210) is clearly not located at the reference number 203 but at the reference number 204.

4. Construction of the patent-in-suit

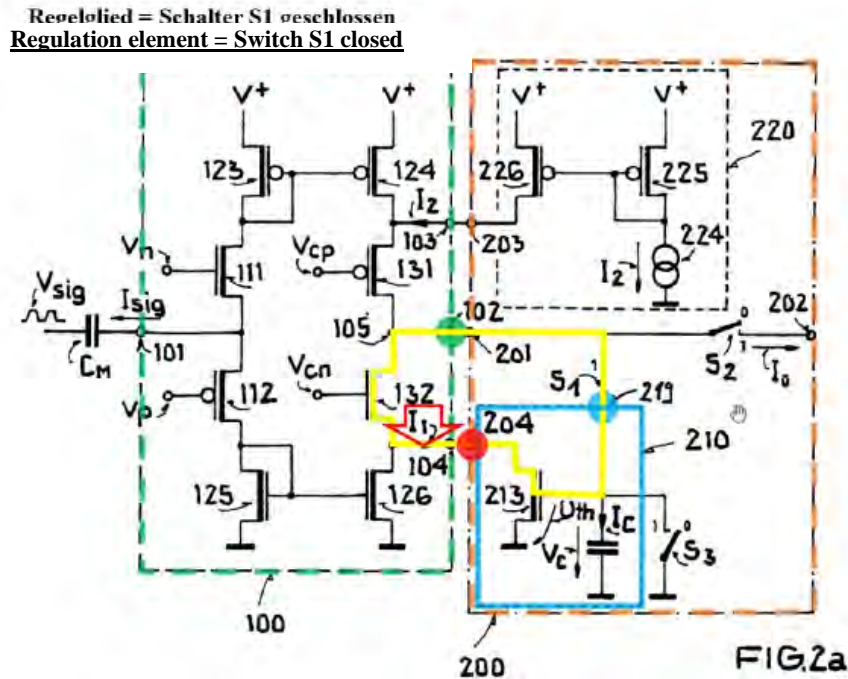
20. The person skilled in the art concerned with the patent-in-suit is an electrical engineer with a university degree and several years of professional experience in the field of electrical engineering, in particular in the field of developing and/or analyzing amplifier circuits.

a) Claim 1

21. Feature 1 of claim 1 provides for a circuit comprising an input current amplifier (100) and an adjusting circuit (200) configured to correct an offset (I_{off}) of an output current (I_o) of the input current amplifier (100).
22. The person skilled in the art is readily aware of the fact that the circuit can additionally comprise further components. It can also be seen in the preferred embodiment of Figure 3 of the patent-in-suit. Functionally, the circuit according to feature 1 must be suitable for correcting the offset of the output current of the input current amplifier in accordance with the further features.
23. **Feature 1.1** of claim 1 of the patent-in-suit provides that the adjusting circuit (200) comprises a controlled current source (210).
24. An input current amplifier within the meaning of the patent-in-suit is understood by the person skilled in the art to be an area or component in a circuit arrangement through which an amplification of an input current takes place.
25. A controlled current source – as the name suggests – outputs a current depending on a control signal (paragraph [0051] of the patent-in-suit). The control signal can be a voltage. In the preferred embodiment according to Fig. 2a, the control voltage is stored on a capacitor (paragraph [0052] of the patent-in-suit).
26. The further features of claim 1 of the patent-in-suit relate to details of the controlled current source.

27. **Feature 1.2** of claim 1 of the patent-in-suit initially provides that an output (204) of the controlled current source (210) is connected to the input current amplifier (100) for impressing an output current (I1) of the controlled current source (210) in the input current amplifier.
28. Thus, in accordance with the patent-in-suit, the controlled current source provides an output current (cf. paragraph [0009] of the patent-in-suit). The output of the controlled current source is further connected to the input current amplifier. By “connecting” or “connected”, the person skilled in the art understands in this feature as well as in the following features a physically executed device for the purpose of a transmission of a signal – the connected parts of the circuit can communicate with each other. For example, a connection allows a current to flow between two connected parts. As can be gathered from the patent-in-suit, this connection can be established directly or via further components. Thus, the patent-in-suit states in the description of the preferred embodiments that a current source is *connected* to the output of the input current amplifier (paragraph [0049] of the patent-in-suit). The patent-in-suit then states that this connection can be made either via various other electronic components, or it is also possible to *connect the current source directly to the output* (paragraph [0051] of the patent-in-suit). The patent-in-suit thus distinguishes, as the person skilled in the art also does, between the broader “connecting” and the “directly connecting”. Accordingly, the claim is not limited to direct connection in accordance with the patent-in-suit. Functionally, the connection in accordance with feature 1.2 of claim 1 of the patent-in-suit must allow “*impressing an output current (...)*”.
29. **Feature group 1.3** of claim 1 of the patent-in-suit provides that an input (219) of the controlled current source (210) is connected by a first switching device (S1) of the adjusting circuit (200) to the output (102) of the input current amplifier (100) to form a regulation element of a control loop, and is disconnected from the output (102) of the input current amplifier (100) by the first switching device (S1) to form a holding element.
30. This wording, which seems complicated at first glance, merely describes that and how the circuit in accordance with the patent can assume two states. Depending on the switching state of the switching device S1, it can form – firstly – a **regulation element** of a control loop (feature 1.3.1 of claim 1 of the patent-in-suit) and – secondly – a **holding element** (feature 1.3.2 of claim 1 of the patent-in-suit).
31. For the overall understanding of the teaching of claim 1, it is also useful to consider feature 1.3.1 together with **feature 1.4** and feature 1.3.2 together with **feature 1.5**, since both describe further aspects of the regulation or holding element, respectively.

32. The **regulation element** of a control loop within the meaning of **features 1.3.1 and 1.4** of claim 1 of the patent-in-suit is formed (feature 1.3.1) by connecting the input of the controlled current source to the output of the input current amplifier by a first switching device of the adjusting circuit. In circuit terms, this means that the switch between the input (of the controlled current source) on one side and the output (of the input current amplifier) on the other side is closed, as, otherwise, the required connection would be broken.
33. By a connection of the adjusting circuit with the output of the input current amplifier, the patent-in-suit also understands in particular an indirect connection designed in such a way that it is possible to connect the output current of the input current amplifier with the controlled current source in such a way that a voltage for the regulation is present in the latter. According to the patent-in-suit, this may be present in different configurations, for example via a transistor (paragraph [0052] of the patent-in-suit) or in other ways (paragraph [0067] of the patent-in-suit). Also, the terms input and output are not necessarily – as shown in the figures of the patent-in-suit and partly in the illustrative figures used below – to be understood in the sense of clearly delimitable “points” in a circuit arrangement. The only functionally decisive factor is that corresponding interfaces are present which constitute a connection in the above sense and which allow the claimed units of the circuit to carry out their function in accordance with the patent.
34. In the connected situation, that is, when the switch 1 is closed and there is a connection between the output of the input current amplifier and the controlled current source, according to feature 1.4 of claim 1 of the patent-in-suit, the controlled current source is arranged to regulate the offset (I_{off}) to a minimum by providing a current value of the output current (I_I). As was described, this offset (I_{off}) is the offset of the output current (I_o) of the input current amplifier (feature 1 of claim 1 of the patent-in-suit).
35. We illustrate these connections again below on basis of the worked example according to **Fig. 2a** of the patent-in-suit. This worked example does contain some (preferred) aspects that are, however, not relevant for asserted claims 1 and 13 worded in a broader manner. However, for clarifying the basic teaching of claim 1 of the patent-in-suit in general, it contains the following colored highlighting added by us:

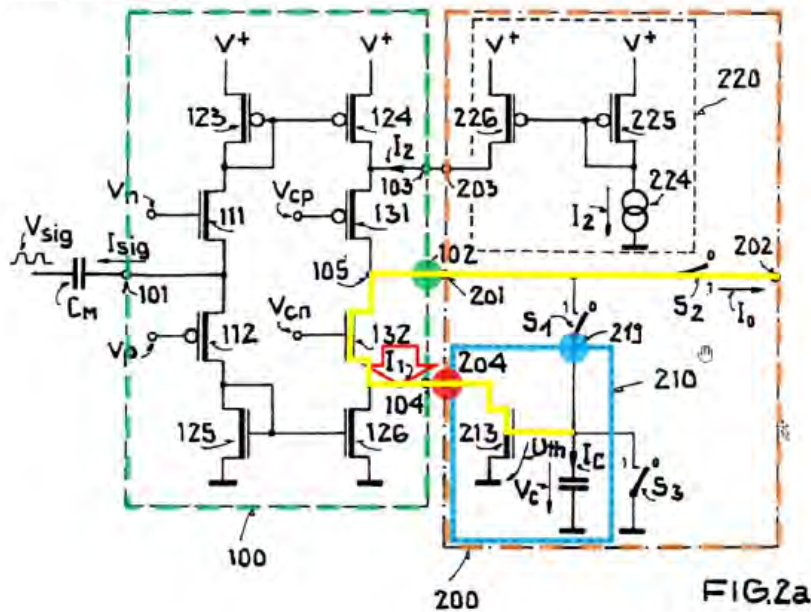


36. As can easily be recognized, the here closed switch (S1) leads to the output (green dot) of the input current amplifier (green dashed line) and the input (blue dot) of the controlled current source (blue line) of the input circuit (orange dashed line) being connected (feature 1.3.1 of claim 1 of the patent-in-suit).
37. As in addition, according to feature 1.2 of claim 1 of the patent-in-suit, the output (red dot) of the controlled current source is connected to the input current amplifier, a control circuit (yellow) is created in the state "Switch S1 closed". In this circuit, the controlled current source functions as the regulation element of the control circuit, by being able to set the output current (I1) (red arrow) for controlling the offset to a minimum (feature 1.4 of claim 1 of the patent-in-suit).
38. The offset (as a result of the difference in current mirror described above), thus is to be canceled out or corrected if possible. A complete correction of the offset is not necessary, as can be gathered from the wording "to a minimum". Here, the term "minimum" only means that the output current is to reach an essentially constant state, that is ideally, but not necessarily, zero (cf. paragraph [0013] of the patent-in-suit).
39. How the setting of the control circuit works technically, is not the subject matter of asserted claim 1 of the patent-in-suit. However, one possibility is described as a preferred worked example in the patent-in-suit (cf. for example paragraphs [0054] et seq. of the patent-in-suit).

40. In contrast to that, the **holding element** in the sense of **features 1.3.2 and 1.5** of claim 1 of the patent-in-suit is formed if the switch S1 is opened. In this case, as provided by feature 1.3.2 of claim 1 of the patent-in-suit, the output (blue dot) of the controlled current source (blue line) is separated from the output (green dot) of the input current amplifier (green dashed line). This is to be illustrated as follows:

Holding element = Switch S1 open

Halteglied = Schalter S1 geöffnet



41. According to this, it does not happen in this situation that the output current (I_o) of the input current amplifier is introduced into the control loop, but the configured regulation or correction is now maintained (thus holding element).
42. Here, the patent-in-suit does not limit itself to a specific type of holding either. However, for the general understanding it may be helpful that the patent-in-suit describes, as an example, that during normal operation, a capacity is loaded, the voltage of which then controls the offset current I_1 during holding operation.
43. As is explained in more detail in paragraph [0014] of the patent-in-suit, the controlled current source maintains the output current “constant, at least for as long as input signals are amplified at the input current amplifier”. After this, “regulate” and “hold” can be carried out again. However, a single cycle of the two states is already sufficient for the realization of the patent-in-suit.

44. With regard to the above statement of fact, we offer as a precaution:

Evidence: Expert opinion

b) Claim 13

45. Claim 13 of the patent-in-suit is a method claim that is complementary to claim 1, the subject matter of which easily becomes clear on basis of the above explanations. In this regard, we refer to the above.

III. Acts of infringement and infringing embodiment

46. The Defendant offers, advertises and distributes vehicles in the Federal Republic of Germany that are equipped with a so-called “*plug-in hybrid technology*”. So-called “*E-machine electronics*” that are crucial for the realization of the teaching of the patent-in-suit and are specified in more detail below, are particularly built into those vehicles. Vehicles that are equipped in that manner are also referred to below as **infringing embodiment**.
47. The plug-in hybrid technology, or also referred to as “*PHEV technology*” (“*PHEV*” stands for “*Plug-In Hybrid Electric Vehicle*”), is obviously characterized for the present proceedings that vehicles operated by means of this technology comprise both a petrol engine and an electronic engine (also referred to as “*E-machine*”) including an electronic component (E-machine electronics) as well as a high-voltage battery. The joint use of these components enables the reduction of fuel consumption and of the vehicle’s CO₂ emissions. In case of insufficient battery charge or capacity of the electronic engine, the combustion engine is automatically switched on as needed.
48. The E-machine electronics (also referred to as “*performance electronics*”) comprise the central intelligence of the drive system of plug-in hybrid vehicles by controlling the electronic motor and establishing its connection to the high-voltage battery.
49. An explanation of the technology, accessible on a website of the Defendant via the URL <https://www.bmw.de/de/topics/faszination-bmw/elektromobilitaet/plug-in-hybride.html> (last accessed on December 27, 2021) is submitted as

Exhibit K 4.

50. An example for such a vehicle, which comprises the PHEV technology and thus the corresponding E-machine electronics, is the model “BMW 530e sedan”.
51. Such a vehicle was correspondingly advertised by the Defendant, among other things, on December 27, 2021 and was offered for sale for a total price of EUR 57,800.00. This German offer, accessed on the German website of the Defendant www.bmw.de under the URL https://configure.bmw.de/de_DE/configure/G30/11AG/FBYAT,P0668,S01CB,S01CX,S01DF,S0205,S0230,S023F,S0255,S02PA,S02VB,S0302,S0423,S0428,S0465,S04K8,S04NE,S04T1,S04U9,S0508,S0534,S0548,S05AV,S0654,S06AC,S06AE,S06AK,S06C4,S06U3,S06WD,S0801,S0851,S0879,S08KA,S08R9,S08TF,S09QX/SE000034?expanded=true (last accessed on December 27, 2021), is submitted as

Exhibit K 5.

52. The Defendant is responsible for this offer. This follows from the corresponding site notice

Exhibit K 6.

53. The E-machine electronics built into such vehicles and relevant for the patent infringement, are comprised in a case, which appears as follows:



54. On the sticker stuck to the side, the designation “BMW” can be read, among other things. The model designation reads “LEB450D”. This can easily be seen from the zoomed in sections depicted below:



55. A so-called “*Bidirectional, Zero Drift, Current Sense Amplifier*” with the designation “AD8418” (below only referred to as “AD8418”) built on the circuit board of the E-machine electronics is of particular importance for the realization of the teaching of the patent-in-suit.
56. As can be gathered from

Exhibit K 7,

Which refers to a data sheet, therein p. 16, the “*branding*”, meaning the designation of AD8418 apparent on the outside, reads “Y4N” or “Y4M”:

ORDERING GUIDE

Model ^{1, 2}	Temperature Range	Package Description	Package Option	Branding
AD8418BRMZ	−40°C to +125°C	8-Lead MSOP	RM-8	Y4N
AD8418BRMZ-RL	−40°C to +125°C	8-Lead MSOP, 13" Tape and Reel	RM-8	Y4N
AD8418WBRMZ	−40°C to +125°C	8-Lead MSOP	RM-8	Y4M
AD8418WBRMZ-RL	−40°C to +125°C	8-Lead MSOP, 13" Tape and Reel	RM-8	Y4M
AD8418WBRZ	−40°C to +125°C	8-Lead SOIC_N	R-8	
AD8418WBRZ-RL	−40°C to +125°C	8-Lead SOIC_N, 13" Tape and Reel	R-8	

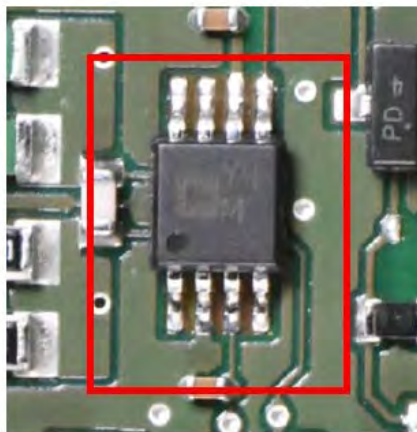
Image 1: Top view after removal of the outer casing



Image 2: Underside of the circuit board with highlighting of AD8418



Image 3: Zoomed in image section - AD8418



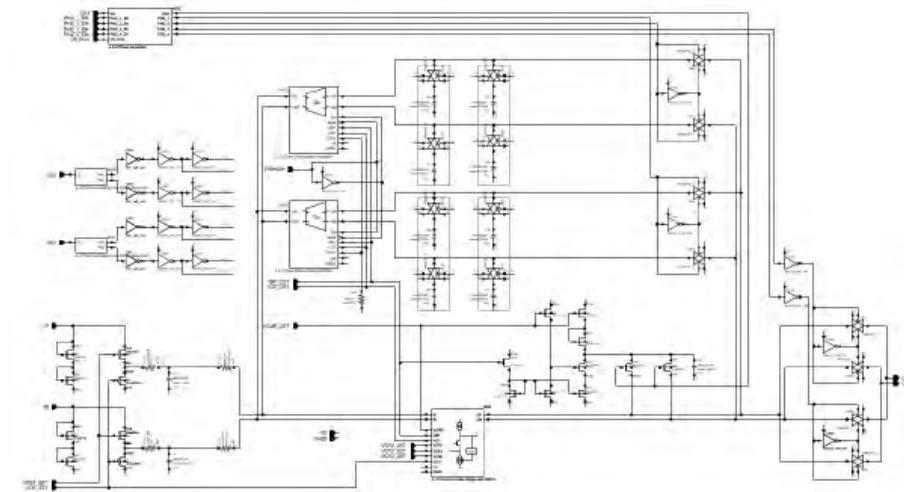
57. For the submission that the component with the branding “Y4M” shown above is the attacked AD8418, we offer, as a precaution,

Evidence: Expert opinion.

For the submission that this component is built into said E-machine electronics in plug-in hybrid vehicles of the Defendant, we offer, as a precaution,

Evidence: Testimony of Mr. Oliver Zipse (member of the board), to be summoned via the Defendant.

58. The circuit arrangement or structure present in AD8418 is schematically shown below:



59. This illustration, which we submit as

Exhibit K 8

is based on a teardown of the model “AD8417”. The AD8418 built into the infringing embodiment comprises the same structure and further does not differ with regard to the functional relationship inside the circuit arrangement.

Evidence: Expert opinion.

60. This is shown by a comparison with the corresponding data sheet of AD8417, which we present as

Exhibit K 9.

61. All “*features*” listed on the first page of the data sheet that are relevant for the offset correction relevant here, correspond to those on page 1 of the AD8418 data sheet. The same applies to the “*General Description*” and finally, the structure of the illustration “*Typical Application Circuit*”

matches the corresponding illustration on page 1 of the AD8418 data sheet. In this regard, the illustration according to **Exhibit K 8** thus also shows the circuit arrangement of AD8418.

Evidence: Expert opinion.

62. We come back to the details in the context of the below infringement subsumption.

IV. Realization:

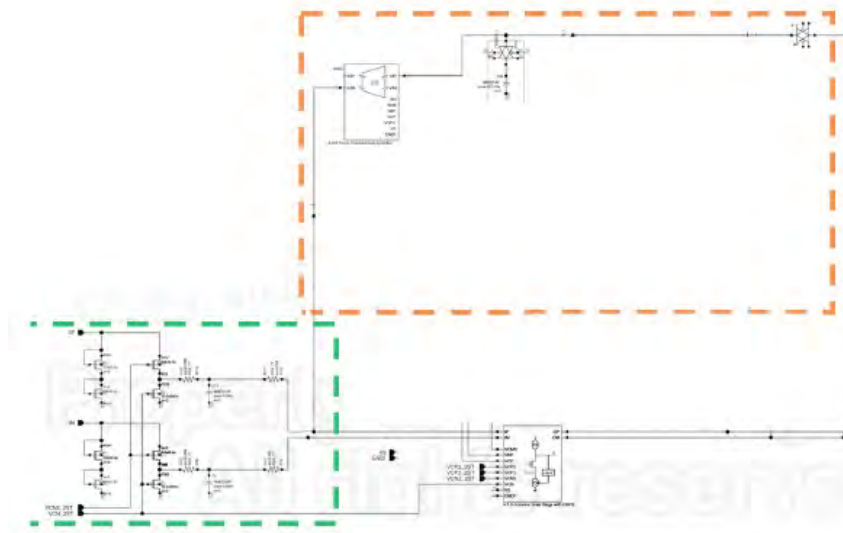
1. Claim 1

63. The infringing embodiment directly used the teaching of claim 1 of the patent-in-suit according to the literal sense.

a) Realization of feature 1

A circuit comprising an input current amplifier (100) and an adjusting circuit (200) configured to correct an offset (I_{off}) of an output current (I_o) of the input current amplifier (100) (feature 1).

64. The infringing embodiment provides a circuit with an input current amplifier and an adjusting circuit to correct an offset of an output current of the input current amplifier.
65. As can be seen in the above illustration according to **Exhibit K 8**, the infringing embodiment comprises a complex circuit arrangement. This arrangement particularly comprises several amplifier regions and also several adjusting circuits in accordance with the patent. For the sake of better understanding, we cut out those parts of the circuit arrangement that do not play a role or play a minor role in the understanding of the realization, in the below illustrations. When reduced to the essentials, the circuit appears as follows:



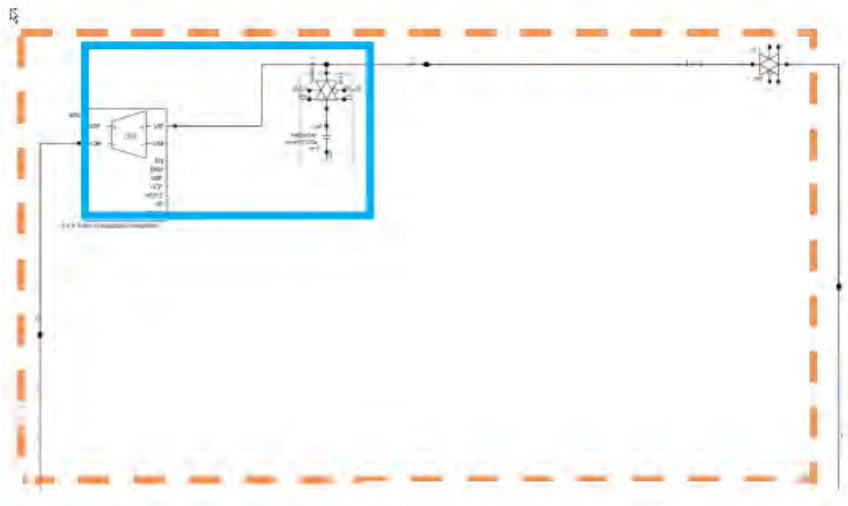
66. As can be gathered from this illustration, the infringing embodiment comprises two cascaded transconductance amplifier levels, in which the amplification is carried out. These amplifier levels can be found in the box dashed in green, although not all components are shown for the purpose of improved clarity. Thus, the circuit comprises a region in which the input current is amplified, which may be superposed by an offset, and thus an input current amplifier in accordance with the patent.
67. In addition, an adjusting circuit for correcting an offset of an output current of the input current amplifier is at hand within the line dashed in orange. This will become clear in the context of the statements regarding further features.
68. The fact that an undesirable offset may occur in the infringing embodiment can be traced back, as explained in the statements regarding the technical background and the prior art, to general process deviations/variations in the production of corresponding components.
69. Thus, feature 1 of claim 1 of the patent-in-suit is realized.

Evidence: Expert opinion

b) Realization of feature 1.1

- the adjusting circuit (200) having a controlled current source (210), (feature 1.1).

70. In the shown circuit arrangement of the infringing embodiment, the adjusting circuit also comprises a controlled current source. The region in which the controlled current source is located is framed in blue in the below section of the region of the adjusting circuit:



71. Just as in the preferred embodiment according to Fig. 2a of the patent-in-suit, a condenser (here referred to as “C45”) is provided, which is able to store a voltage and to apply it to an input of an amplifier (symbolized by the trapezoidal element designated by “Gm”). Depending on the voltage of the condenser C45, the amplifier outputs current, meaning the current is controlled by the voltage.
72. Thus, feature 1.1 of claim 1 of the patent-in-suit is realized.

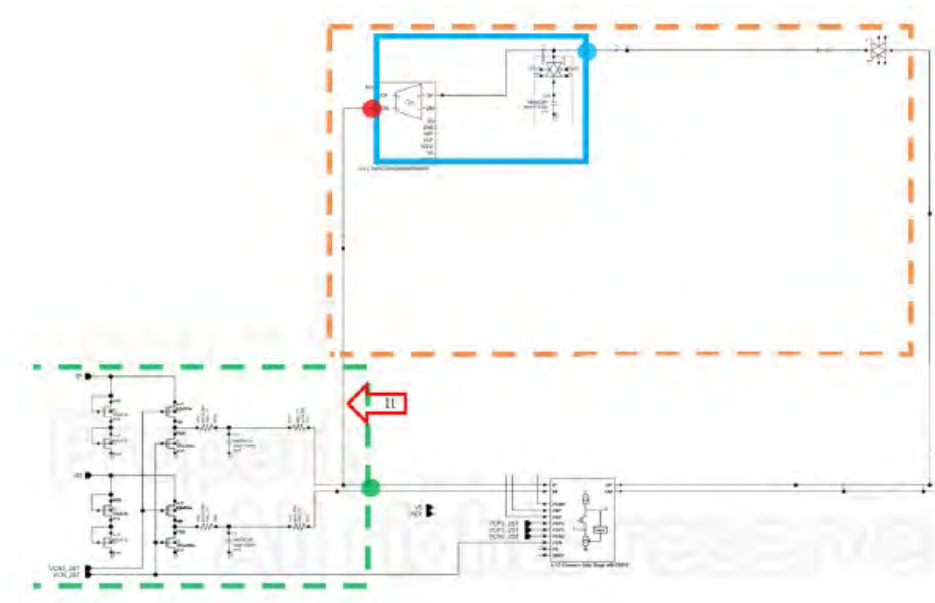
Evidence: Expert opinion

c) Realization of feature 1.2

- wherein an output (204) of the controlled current source (210) is connected to the input current amplifier for impressing an output current (I1) of the controlled current source (210) in the input current amplifier (100), (feature 1.2).

73. As illustrated below, the output (red dot) of the controlled current circuit in the shown circuit arrangement of the infringing embodiment is also connected to the input current amplifier to impress an output current (I1) (red arrow) of the controlled current source in the input current amplifier. This connection is made by a simple line (i.e. direct). In the input current amplifier,

the line drawn downwards from the output of the controlled current source meets a horizontally drawn line and is connected to it (symbolized by a black dot):



74. This direct connection necessarily leads to the output current of the controlled current source flowing into the line of the input current amplifier drawn in the below layout (the current may of course also flow in the other direction). The current simply has no other choice than following the conductive path. It is impressed upon the (output of the) input current amplifier; feature 1.2 of claim 1 of the patent-in-suit is thus realized.
75. Against this background, feature 1.2 is realized.

Evidence: Expert opinion

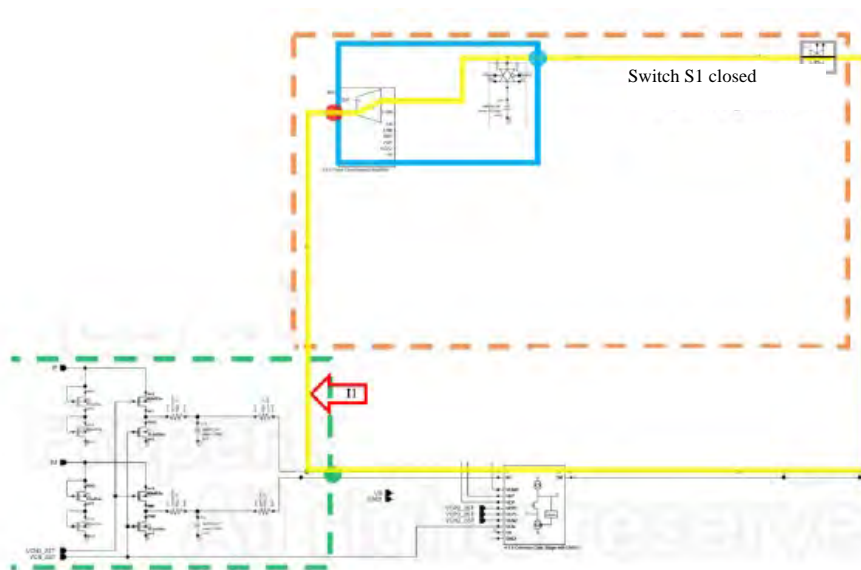
d) Realization of feature group 1.3 in combination with feature 1.4: Regulation element

- wherein an input (219) of the controlled current source (210)

is connected by a first switching device (S1) of the adjusting circuit (200) to the output (102) of the input current amplifier (100) to form a regulation element of a control loop (feature group 1.3)

wherein the controlled current source (210), acting as a regulation element is configured to regulate the offset (I_{off}) to a minimum by providing a current value of the output current (I_1), and (feature 1.4)

76. As illustrated below, it is the case in the shown circuit arrangement of the infringing embodiment that in case of a closed switch S1 (framed in gray), the input (blue dot) of the controlled current source is connected to the output (green dot) of the input current amplifier.



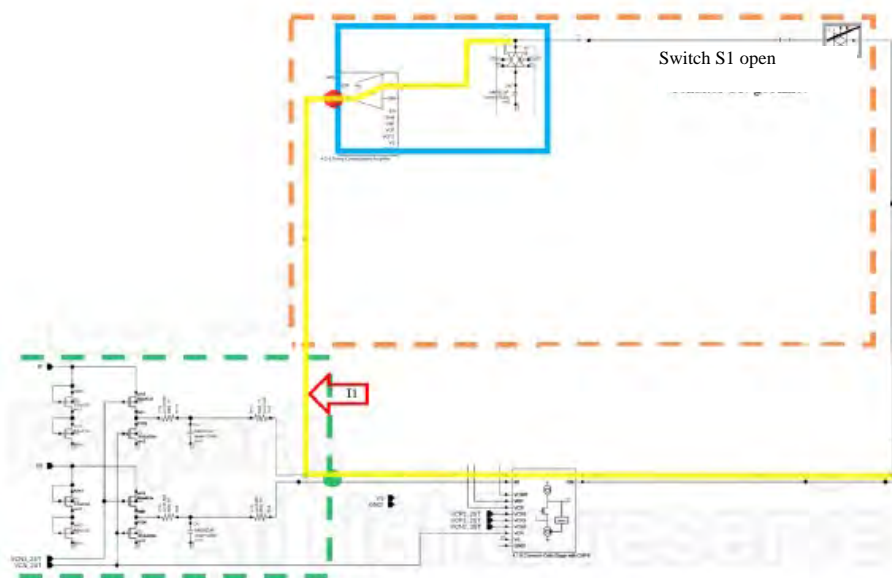
77. This connection in turn results in a control loop (yellow), in which the controlled current source correspondingly acts as a regulation element in that it is configured to regulate an offset to a minimum by the provision of an output current (I_1) (red arrow).
78. Against this background, feature group 1.3 in combination with feature 1.4 of claim 1 of the patent-in-suit is also realized.

Evidence: Expert opinion

e) **Realization of feature group 1.3 in combination with feature 1.5: Holding element**

- wherein the controlled current source (210), acting as a holding element, is configured to hold the current value, associated with the minimum, of the output current (I_1) (feature 1.5)

79. If the desired regulation to a minimum was carried out, the shown circuit arrangement of the infringing embodiment switches into the “holding state” in accordance with the patent as a result of opening switch S1. This can be illustrated as follows:



80. The input of the controlled current source (blue dot) is now separated from the output of the input current amplifier by the (open) switching device S1. Thus, the control loop is interrupted.
81. In this situation, the controlled current source acts as a holding element by being configured to hold the current value, associated with the minimum, of the output current (I1).
82. The current value on the condenser C45 is maintained in this state. Therefore, the amplifier (“Gm”) of the controlled current source - as explained above - still outputs the set current. This current is - as is also described above - fed to the output of the input current amplifier via the line drawn downwards from the output of the amplifier (“Gm”) of the controlled current source.
83. Against this background, feature group 1.3 of claim 1 of the patent-in-suit in combination with feature 1.5 of claim 1 of the patent-in-suit are also realized.

Evidence: Expert opinion

f) Interim conclusion

84. Therefore, the infringing embodiment directly makes use of all features of claim 1 of the patent-in-suit according to the literal sense.
85. The illustrations used in the context of the infringement subsumption are submitted as a whole in the DIN A4 format as

Exhibit K 10.

86. In addition, we also provide these illustrations to the Chamber as physical print-outs in color in the DIN A3 format. We are happy to provide the same to the Defendant upon request.

2. Claim 13

87. The direct realization of the features of claim 13 according to the literal sense also follows from the above explanations.

Evidence: Expert opinion

B. Regarding legal matters

88. The asserted claim for injunctive relief follows from Secs. 139(1), (9) sentence 2, no. 1 German Patent Act. By offering the infringing embodiments in the Federal Republic of Germany, the Defendant uses the technical teaching of the patent-in-suit according to the literal sense. The Defendant's offer further forms the basis of a risk of committal also for putting into circulation, using, owning and importing, so that the claim for injunctive relief in this regard is also justified (Higher Regional Court of Karlsruhe, judgment dated January 14, 2009, 6 U 54/06, InstGE 11, 15, marginal no. 151 - "SMD-Widerstand", Higher Regional Court of Düsseldorf, judgment dated April 6, 2017 – I-2 U 51/16).
89. The Plaintiff has a claim against the Defendant for damages resulting from Sec. 139(2) German Patent Act on the merits. It would have been up to the Defendant as a specialized company to examine whether the products offered infringe any patents. By refraining from the corresponding examination, the Defendant disregarded the duty of care necessary in commerce, Sec. 276 (2) German Civil Code. The occurrence of damage is sufficiently likely due to the Defendant's infringing action. However, as the Plaintiff has not yet been able to quantify this

loss, since the specific extent of the acts of use infringing its rights is not known to the Plaintiff, through no fault of its own, the Plaintiff has a legal interest in obtaining a finding of the obligation to pay damages pursuant to Sec. 256(1) German Code of Civil Procedure (ZPO).

90. The Defendant further has to pay an appropriate compensation to the Plaintiff pursuant to Sec. 33 German Patent Act.
91. In order for the Plaintiff to be in a position to quantify the claim for damages, it is entitled to a claim against the Defendant for information. Due to the unauthorized use of the subject matter of the invention, the claim for information regarding the origin and the distribution channel of the infringing embodiments follows directly from Sec. 140b (1), German Patent Act and the scope of the obligation to provide information follows from Sec. 140b (3) German Patent Act. The obligation for rendering of accounts follows from Secs. 242, 259 German Civil Code. The Plaintiff is reliant upon this information, which it is lacking through no fault of its own, in order to assert the claim for compensation and damages it is entitled to; the Plaintiff's request for information does not place an unreasonable burden upon the Defendant. The Defendant is granted the right to involve an auditor with respect to non-commercial customers and offerees.
92. The claim for destruction follows from Sec. 140a (1) sentence 1, German Patent Act and the claim for removal from the distribution channels follows from Sec. 140a (3) German Patent Act.
93. The local jurisdiction of the Regional Court of Munich I follows from the fact that the Defendant offered the infringing embodiments on its website throughout the Federal Republic of Germany, Sec. 32 German Code of Civil Procedure. The subject-matter jurisdiction of the Regional Court of Munich I arises from Sec. 143(1) German Patent Act.

(digital signature)

Hosea Haag

Attorney